SOHIO PETROLEUM COMPANY
EXPLORATION AND PRODUCTION

P. O. BOX 30
CASPER, WYOMING 82602

June 18, 1984
WHW: 98
0092C

Frank Snell
Bureau of Land Management
2370 South, 2300 West
Salt Lake City, UT 84119

Re: App.for Permit to Drill
Christmas Creek 26-15
SW/4 SE/4, Sec. 26, T2N,
R10E
Summit County, Utah

Dear Mr. Snell:

Attached you will find the original and two copies of the Application for Permit to Drill the Christmas Creek 26-15 well. This site is located within the boundaries of the Wasatch-Cache National Forest, Evanston Ranger District. A copy is being transmitted to their office concurrently.

The location and access route have been staked. The archeological inventory and H_2S Contingency Plans are being compiled at this time and should be received at your office within the next few weeks. All necessary applications are being filed with the State Engineer's Office, Utah Division of Oil, Gas, and Mining and Summit County Planning Office.

Please advise if further information is necessary. We will be available for the onsite inspection as soon as it can be scheduled.

Sincerely,

Original Signed By:

W.H. Ward
District Manager

TR/jc
cc: Ed Guynn, BLM, Salt Lake City
Bernard Asay, USFS, Evanston
Norm Stout, Division Oil, Gas and Mining
J.H. Walters
T. Rooney
File

CONFIDENTIAL

Form 9-331 C
(May 1963)

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1425.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

5. LEASE DESIGNATION AND SERIAL NO.: U-21663

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: NA

7. UNIT AGREEMENT NAME: Christmas Creek II

8. FARM OR LEASE NAME: Christmas Creek

9. WELL NO.: 26-15

10. FIELD AND POOL, OR WILDCAT: Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec 26, T4N, R10E

12. COUNTY OR PARISH: Summit 13. STATE: Utah

1a. TYPE OF WORK: DRILL [X] DEEPEN [ ] PLUG BACK [ ]

b. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] OTHER — SINGLE ZONE [ ] MULTIPLE ZONE [X]

2. NAME OF OPERATOR: Sohio Petroleum Company

3. ADDRESS OF OPERATOR: P.O. Box 30, Casper, WY 82602

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 2216' FEL, 871' FSL SWSE
At proposed prod. zone: Same

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 36 miles south of Evanston, WY

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)	16. NO. OF ACRES IN LEASE	17. NO. OF ACRES ASSIGNED TO THIS WELL
449'	860	Unspaced
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	**19. PROPOSED DEPTH**	**20. ROTARY OR CABLE TOOLS**
NA	8600'	Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 8886.8' GR

22. APPROX. DATE WORK WILL START*: August 1, 1984

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17½"	13-3/8"	48	300'	600 sx
12¼"	9-5/8"	40	5300'	2300 sx
8-1/2"	7"	23, 26	0-8600'	400 sx

Attachments
#1 - Drilling Program
#2A, 2B - Pressure Equipment Diagrams
#3 - Surface Use Plan
#4 - Surveyor's Plat
#5 - USGS Quadrangle
#6 - Cut and Fill Diagram
#7 - Well Site Plat
#8 - Production Site Plat
#9 - H_2S Plan - will be mailed as soon as completed.

RECEIVED
JUN 21 1984
DIVISION OF OIL
GAS & MINING

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.
SIGNED Original Signed By W.H. Ward TITLE District Manager DATE 6/18/84

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY _____

CONDITIONS OF APPROVAL, IF ANY:

APPROVED BY THE STATE
OF UTAH DIVISION OF
OIL, GAS, AND MINING
DATE: 6/27/84
BY: John R. Baza

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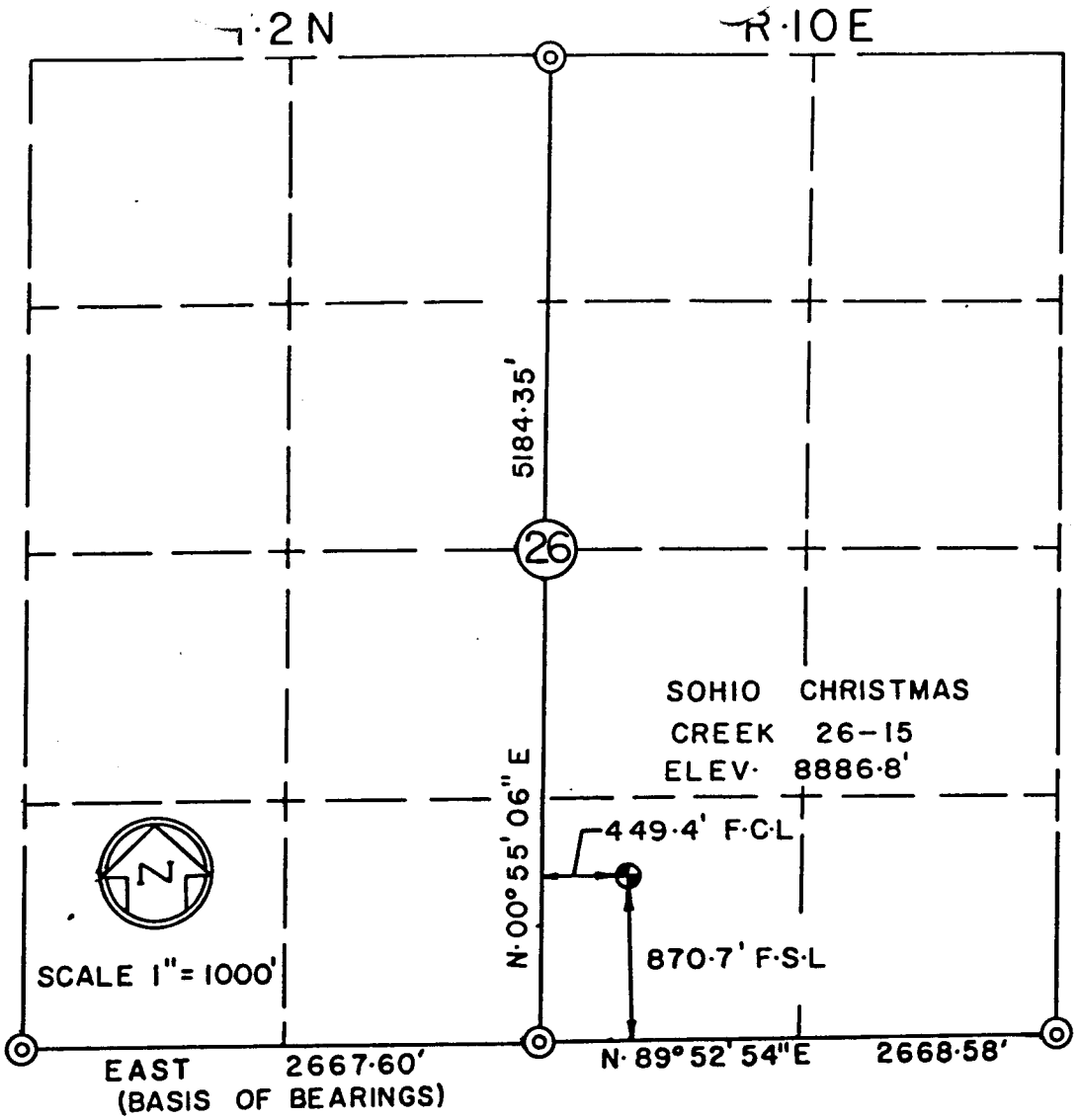

◎ INDICATES G·L·O· BRASS CAP FOUND

SOHIO CHRISTMAS CREEK 26-15 is located in the SW/4SE/4 of Section 26, T. 2 N., R. 10 E. of the Salt Lake Meridian, Summit County, Utah. The elevation of 8886.8 is based on a spot elevation of 8810 at the road intersection near the N/4 corner of Section 26, T. 2 N., R. 10 E. as shown on the U.S.G.S. Christmas Meadows Quad.

CERTIFICATE OF SURVEYOR

STATE OF WYOMING)
COUNTY OF SUBLETTE)SS

I, ROBERT A. HARROWER of Pinedale, Wyoming, hereby certify that this map was made from notes taken during an actual survey made under my supervision on May 31 thru June 1, 1984, and that it correctly represents the survey as shown.

Registered Professional Engineer and Land Surveyor
No. 5441
ROBERT A. HARROWER

Robert A Harrower
ROBERT A. HARROWER, UTAH L.S. 5441

Attachment 4

RIO VERDE Engineers · Surveyors Environmental Planners PINEDALE WYOMING	SOHIO	SOHIO PETROLEUM COMPANY CHRISTMAS CREEK 26-15 SW/4SE/4 of Sec. 26, T. 2 N., R. 10 E. SUMMIT COUNTY, UTAH -- WASATCH NATIONAL FOREST LOCATION PLAT	REVISION	DATE 6-15-84 J.O. 1102 SHEET of

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Attachment #1
Drilling Program
Sohio Petroleum Company
Christmas Creek 26-15

2216' FEL, 871' FSL
Sec. 26, T2N, R10E
Summit County, Utah

1) Geology: Surface, Markers and Possible Contents

Tertiary Allivium	Surface	Water
Nugget	4000'	-
Ankareh	4400'	-
Thaynes	5200'	Oil
Woodside	6000'	-
Phosphoria	6700'	Oil
Weber	7200'	-
Madison	8500'	Oil/Gas

2) Proposed Casing Program

SF Tension	1.6
Collapse	1.125
Burst	1.25

Hole	Depth	O.D.	Weight	Grade	Joint	New/Used
17-1/2"	0-300'	13-3/8	48#/ft.	H-40	ST&C	New
12-1/4"	0-5300'	9-5/8	40#/ft.	K-55	LT&C	New
8-1/2"	0-8600'	7"	23 & 26#	L-80	LT&C	New

Conductor Casing - 20" conductor will be set at 30' G.L. and cemented back to surface.

Proposed Cement Program:

Volumes and additives will change subject to conditions encountered during drilling operations.

Surface - 13-3/8" 0-300' 600 sx. Class 'G' + additives.
Protection - 0-5300'
Lead - 2500 sx. Lite Wate + additives
Tail - 300 sx. Class 'G' + additives.
Production - 5000-8600' 400 sx. Class 'G' + additives.

3) Pressure Control Equipment - See Attachments 2A and 2B
After NU BOP's:

1. Ram type preventers shall be tested to 5000 W.P.
2. Annulus preventers shall be tested to 3000 psi.

Pipe rams shall be operated every 24 hours. The blind rams shall be operated after each trip.

Blowout prevention drills shall be held by each crew at least every week and the drills must be posted in the tour reports.

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Pressure Control Equipment - (Cont'd)

Stack will be fully tested after any use under pressure or if it is broken down at any time. Tests to the above pressure are to be conducted every 30 days.

The accumulator system will be 3000 psi working pressure with a minimum of 120 gallons with remote controls on the rig floor and manual controls at the unit.

4) Type and Characteristics of Circulating Muds:

		Wt.	Vis.	W.L.
0-300'	Spud Mud	8.8-9.2	40-60	N/C
300-5300'	Low Solids	8.6-12.0	30-60	10-20
5300-8600'	LSND	8.6-9.0	30-40	10±

An adequate supply of sorptive materials will be on hand in the event of unanticipated downhole problems. Weight additives will be on location as required.

5) Auxillary Equipment

Kelly cock, stabbing valve and pit level monitor from surface to total depth. A mud logger with gas detection will be on location from below surface casing setting point to total depth.

6) Testing, Coring and Logging Program:

A) Drill Stem Tests:

DST's will be run per conditions encountered while drilling the well. Potential tests are anticipated in the Thaynes and Phosphoria.

B) Cores:

Cores will be run per conditions encountered while drilling the well. Potential cores are anticipated in either the Thaynes or Phosphoria.

C) Testing, Coring and Logging

300 to 8600'	DLL/Sonic
	DLL/MSFL
	LDT/CNL/NGT
	Sonic
	Dipmeter
	VSP

Rotating Head
OPTIONAL

ANNULAR PREVENTER
13-5/8" x 3000#
H_2S Trim

BLIND RAMS
13-5/8" x 5000#
H_2S Trim

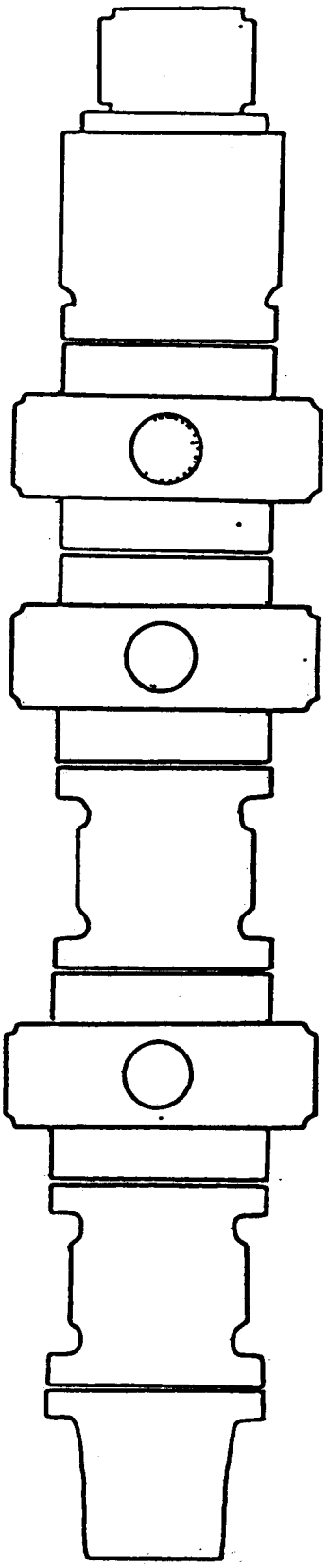
PIPE RAMS
13-5/8" x 5000#
H_2S Trim

DRILLING SPOOL
13-5/8" x 5000#
w/5000# Outlets
H_2S Trim

PIPE RAMS
13-5/8" x 5000#
H_2S Trim

DRILLING SPOOL
(OPTIONAL)

WELLHEAD



TO BE USED ON
13-3/8" to T.D.

CASING SPOOL TO BE USED
IF ANY INTERMEDIATE STRING
OF CASING IS SET.

NOTE: ALL CONNECTIONS FLANGE TYPE,
H_2S TRIM

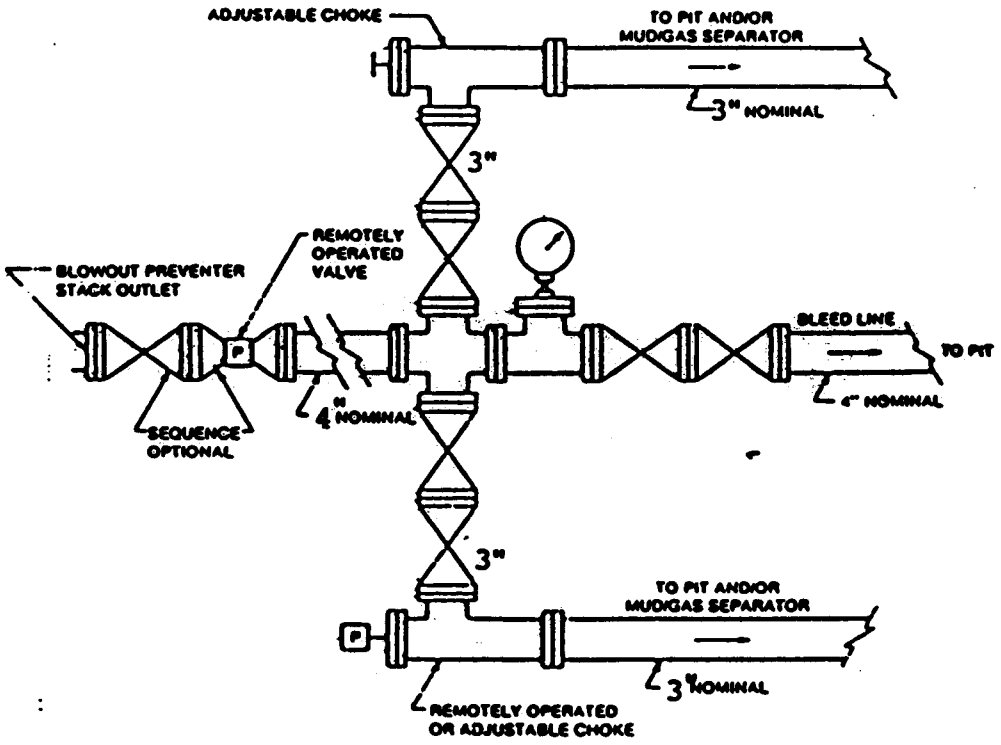
SOHIO PETROLEUM COMPANY
CHRISTMAS CREEK 26-15
SUMMIT COUNTY, UTAH

ATTACHMENT 2A

CONFIDENTIAL

SOHIO PETROLEUM COMPANY
EXPLORATION AND PRODUCTION

P. O. BOX 30
CASPER, WYOMING 82602



Typical choke manifold assembly for 5M rated working pressure service

CHRISTMAS CREEK 26-15
SUMMIT COUNTY, URAH

ATTACHMENT 2B

CONFIDENTIAL

Attachment #3
Surface Use Plan
Sohio Petroleum Company
Christmas Creek 26-15

2216' FEL, 871' FSL
Sec. 26, T2N, R10E
Summit County, Utah
U-27663

1) Existing Roads

a) Surveyor's Plat - Attachment #4.
b) Route and Distance - Attachment #5.
c) Plans for improvements and/or maintenance of existing roads - plans are underway to make improvements along the North Slope Road and the East Fork Bear River Road in conjunction with production operations on the Christmas Creek 35-B well.

2) Planned Access Road

a) Approximately 1/2 mile of new construction will be required to access this location from the East Fork Bear River Road. The road will be an 18' gravelled surface and ditched along the sides. A minimum 18" culvert will be installed where the new access intersects with the existing road.

b) No cattleguards, fence cuts, or turnouts are necessary.

3) Existing Wells Within a One Mile Radius: (Attachment #5)

Water - 1, Injection - 0, Disposal - 0, Producing - 1, Drilling - 0.

4) Existing and/or Proposed Facilities if Well is Productive:

a) Existing - None.
b) Proposed - See Attachment #8.

5) Location and Type of Water Supply:

a) The primary source of water will be pumped from the East Fork Bear River, approximately .4 mile to the west. The necessary permit will be obtained from the State Engineer's Office.

b) If needed, the secondary source will be from a water well drilled on location.

6) Construction Materials:

a) The amount of topsoil to be stockpiled will be specified by FS/BLM.

b) Gravel will be hauled in from an outside source to be arranged by the dirt contractor.

7) Methods for Handling Waste Disposal:

a) Cuttings will be contained and buried in the reserve pit.

b) Drilling fluids will be contained in the reserve pit and allowed to evaporate prior to backfilling the pit.

c) All test fluids will be contained in test tanks and hauled off location by service company.

d) Sewage will be contained in holding tanks buried on location and removed upon completion.

e) Garbage and other waste materials will be handled in a trash/burn pit which will be entirely enclosed with wire mesh and buried upon completion.

f) Upon completion, all unnecessary materials will be hauled off location.

8) Ancillary Facilities - None.

9) Well Site Layout

a) Cuts and Fills - Attachment #6.

b) Well Site Facilities and Rig Orientation - Attachment #7.

c) The reserve pit will be lined if rock or gravel is encountered.

10) Plans for Reclamation

a) Well Site

If this well is productive, those portions of the pad not required for operations will be recontoured and reseeded as soon as possible.

Upon abandonment, the reserve pit will be completely fenced and any remaining oil will be skimmed from the surface. Waste disposal will be handled as outlined in #7. All pits and holes will be backfilled.

When the reserve pit fluids have evaporated or are removed, the location will be restored to its approximate original contour. Topsoil will then be replaced and the seed mix recommended by the FS/BLM will be applied. The entire well site will be fenced until the new vegetation has established itself, if requested by FS/BLM.

Plans for Reclamation - (Cont'd)

b) Access Road

The access road will be obliterated at the same time and in the same manner as outlined above for the drill pad upon abandonment.

c) Other

Initial reclamation efforts will commence during the 1985 field season. Completion will be as soon as possible, dependent upon production or abandonment and the length of each field season.

11) Surface Owner: U.S. Forest Service, Wasatch-Cache National Forest, Evanston Ranger District.

12) Other: Any additional mitigating measures outlined in the approved Environmental Assessment will be enforced.

13) Operator's Representative and Certification

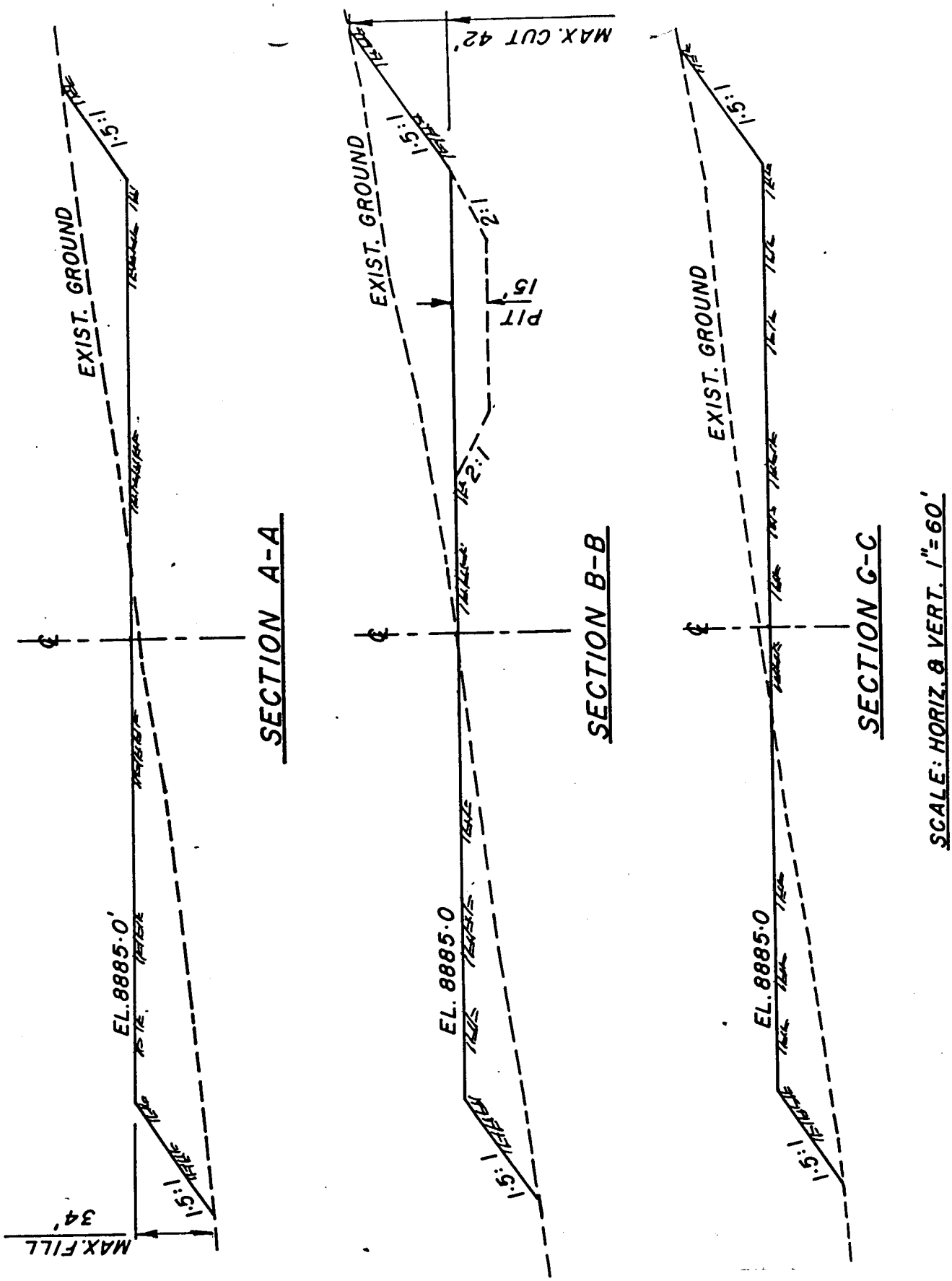
I hereby certify that I, or persons under by direct supervision, have inspected the proposed drillsite and access route; that I am familiar with the conditions which currently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and, that the work associated with the operations proposed herein will be performed by Sohio Petroleum Company and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

Original Signed By:

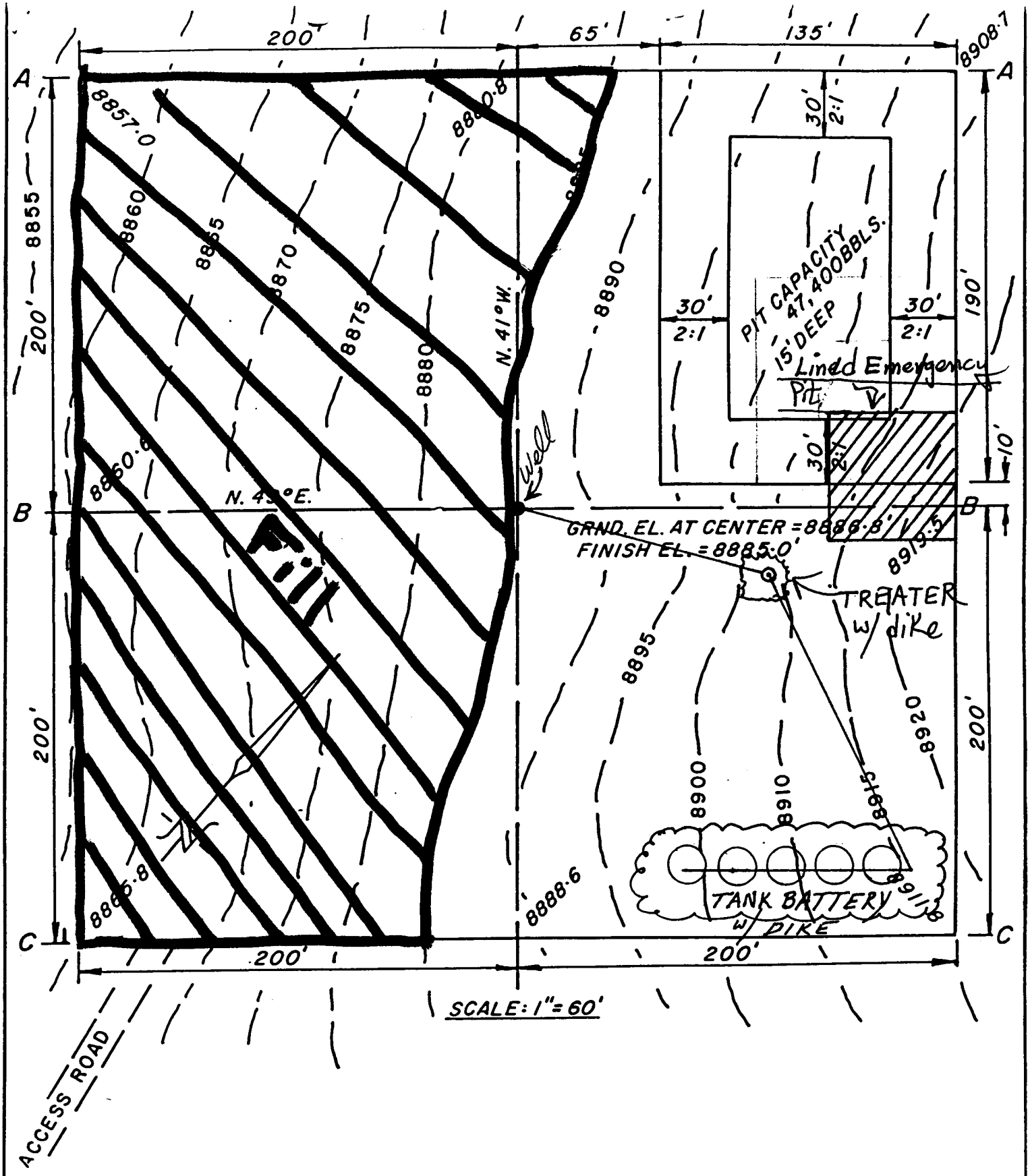
W.H. Ward
District Manager

Date



Attachment 6

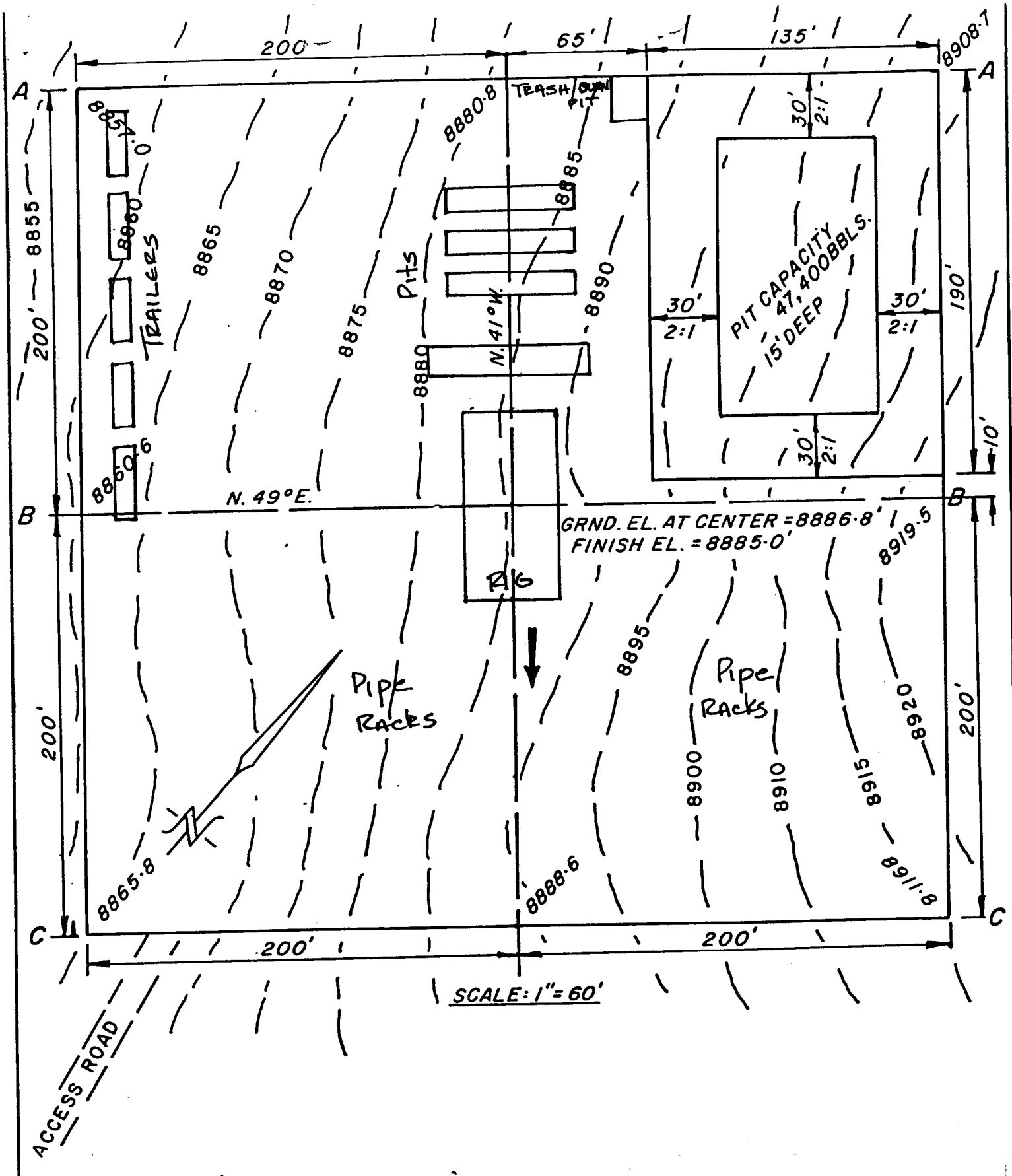
RIO VERDE Engineers · Surveyors Environmental Planners PINEDALE WYOMING	SOHIO	SOHIO PETROLEUM COMPANY CHRISTMAS CREEK 26-15 SW/4SE/4 of Sec. 26, T. 2 N., R. 10 E. SUMMIT COUNTY, UTAH -- WASATCH NATIONAL FOREST DRILL SITE -- CROSS-SECTIONS	REVISION CONFIDENTIAL
			DATE 6-15-84 J.O. 1102 SHEET 1 OF



Attachment 8

RIO VERDE Engineers · Surveyors Environmental Planners PINEDALE WYOMING	SOHIO	SOHIO PETROLEUM COMPANY CHRISTMAS CREEK 26-15 SW/4SE/4 of Sec. 26, T. 2 N., R. 10 E. SUMMIT COUNTY, UTAH -- WASATCH NATIONAL FOREST DRILL SITE	REVISION	DATE 6-15-84 J.O. 1102 SHEET

CONFIDENTIAL



Attachment 7

RIO VERDE
Engineers · Surveyors
Environmental Planners
PINEDALE, WYOMING

SOHIO

SOHIO PETROLEUM COMPANY
CHRISTMAS CREEK 26-15
SW/4SE/4 of Sec. 26, T. 2 N., R. 10 E.
SUMMIT COUNTY, UTAH -- WASATCH NATIONAL FOREST
DRILL SITE

REVISION

DATE 6-15-84
J.O. 1102
SHEET 01

CONFIDENTIAL

To Evanston, WY 32 miles

North Slope Road

East Fork Bear River Road

Access Road

26-15 Proposed

Water Well

35-B

Sohio Petroleum Company
Christmas Creek 26-15
SW/4 SE/4, Sec. 26, T2N, R10E
Summit County, Utah

Attachment 5

CONFIDENTIAL

SOHIO PETROLEUM COMPANY
EXPLORATION AND PRODUCTION

P. O. BOX 30
CASPER, WYOMING 82602

June 20, 1984
WHW: 109

Frank Snell
Bureau of Land Management
2370 South, 2300 West
Salt Lake City, UT 84119

Re: Application for Permit
to Drill
Christmas Creek 26-15
Sec. 26, T2N, R10E
Summit County, Utah

Dear Mr. Snell:

The APD for the Christmas Creek 26-15 has just recently been submitted. It is requested that **confidentiality** be maintained for all **proprietary** information related to this well beginnning with the APD for the maximum allowable period.

From this date on, all such information (i.e. geologic tops, logs, DST results and core analyses) will be appropriately marked prior to submittal to your office. Please contact this office with any questions or comments.

Also attached are copies of page 3 - Attachment #1, Drilling Program to be inserted in the APD's. This page was inadvertently omitted during copying.

Thank you for your attention to this matter.

Sincerely,

W.H. Ward

W.H. Ward
District Manager

TR/jc

cc: Ed Guynn, BLM, Salt Lake City
Bernard Asay, USFS, Evanston
Norm Stout, Division Oil, Gas and Mining
J.H. Walters
T. Rooney
M. Pajak
File

Testing, Coring and Logging Program - (Cont'd)

D) Stimulation and completion procedures will be determined after evaluation of the drilling and testing information. Once determined, they will be submitted via a Sundry Notice for approval.

7) Anticipated Abnormal Conditions

No abnormal pressures or temperatures are expected. H_2S gas is possible, therefore, an H_2S contingency plan is being developed and will be submitted upon its completion.

8) The anticipated spud date is August 1, 1984. Operations should last 70 days.

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OPERATOR Sohio Petroleum Co. DATE 6/29/84

WELL NAME Christmas Creek #26-15

SEC SW SE 26 T 2N R 10E COUNTY Summit

43-043-30258
API NUMBER

Fed
TYPE OF LEASE

POSTING CHECK OFF:

☐ INDEX	☐ HL	☐
☐ NID	☐ PI	☐
☐ MAP	☐	☐

PROCESSING COMMENTS:

Unit Well

Need water permit

APPROVAL LETTER:

SPACING: ☑ A-3 Christmas Creek II UNIT ☐ c-3-a _____ CAUSE NO. & DATE

☐ c-3-b ☐ c-3-c

SPECIAL LANGUAGE:

1- Water

- [x] RECONCILE WELL NAME AND LOCATION ON APD AGAINST SAME DATA ON PLAT MAP.
- [x] AUTHENTICATE LEASE AND OPERATOR INFORMATION
- [x] VERIFY ADEQUATE AND PROPER BONDING
- [x] AUTHENTICATE IF SITE IS IN A NAMED FIELD, ETC.
- [ ] APPLY SPACING CONSIDERATION
  - [ ] ORDER _____
  - [x] UNIT _____
  - [ ] c-3-b
  - [ ] c-3-c
- [x] CHECK DISTANCE TO NEAREST WELL.
- [ ] CHECK OUTSTANDING OR OVERDUE REPORTS FOR OPERATOR'S OTHER WELLS.
- [x] IF POTASH DESIGNATED AREA, SPECIAL LANGUAGE ON APPROVAL LETTER
- [x] IF IN OIL SHALE DESIGNATED AREA, SPECIAL APPROVAL LANGUAGE.

June 27, 1984

Sohio Petroleum Company
P. O. Box 30
Casper, Wyoming 82602

RE: Well No. Christmas Creek #26-15
SWSE Sec. 26, T. 2N, R. 10E
871' FSL, 2216' FEL
Summit County, Utah

Gentlemen:

Approval to drill the above referenced oil well is hereby granted in accordance with Section 40-6-18, Utah Code Annotated, as amended 1983; and predicated on Rule A-3, General Rules and Regulations and Rules of Practice and Procedure, subject to the following stipulations:

1. Prior to commencement of drilling, receipt by the Division of evidence providing assurance of an adequate and approved supply of water.

In addition, the following actions are necessary to fully comply with this approval:

1. Spudding notification to the Division within 24 hours after drilling operations commence.

2. Submittal to the Division of completed Form OGC-8-X, Report of Water Encountered During Drilling.

3. Prompt notification to the Division should you determine that it is necessary to plug and abandon this well. Notify John R. Baza, Petroleum Engineer, (Office) (801) 533-5771, (Home) 298-7695 or R. J. Firth, Associate Director, (Home) 571-6068.

4. Compliance with the requirements and regulations of Rule C-27, Associated Gas Flaring, General Rules and Regulations, Oil and Gas Conservation.

5. This approval shall expire one (1) year after date of issuance unless substantial and continuous operation is underway or an application for an extension is made prior to the approval expiration date.

The API number assigned to this well is 43-043-30258.

Sincerely,

R. J. Firth
Associate Director, Oil & Gas

RJF/as

cc: Branch of Fluid Minerals

Enclosures

SOHIO PETROLEUM COMPANY
EXPLORATION AND PRODUCTION

P. O. BOX 30
CASPER, WYOMING 82602

July 3, 1984
WHW: 12
0124C

Ron Firth
Division Oil, Gas, and Mining
4241 State Office Building
Salt Lake City, UT 84114

Re: App. for Permit to Drill
Christmas Creek 26-15
NW/4 SE/4, Sec. 26, T2N,
R10E
Summit County, Utah

Dear Mr. Firth:

Enclosed is the original and two copies of the Application for Permit to Drill the Christmas Creek 26-15 well. On June 18, 1984 a federal APD was submitted for the same well, federal lease #U27663. Since that time, the surface location was re-oriented to minimize surface disturbance. As a result, the well bore is now within the boundaries of a State of Utah lease. Therefore, it is requested that the APD submitted previously be cancelled and this new APD be processed for approval. It is also requested that all proprietary information (i.e. geologic tops, logs, DST results and core analyses) be kept confidentiial for the maximum allowable time period. From this date on all such information will be appropriately marked prior to submittal to your office.

Please advise if further information is needed to approve this application.

Sincerely,

R.D. Vassar
District Drlg. Supt.

TR/jc
cc: Ed Guynn, BLM
Frank Snell, BLM
Jerry Green, FS
J.H. Walters
R.V. Schock
T. Rooney
File

Form OGC-1a

SUBMIT I RIPLICATE*
(Other instructions on reverse side)

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work
DRILL [X] DEEPEN [ ] PLUG BACK [ ]

b. Type of Well
Oil Well [X] Gas Well [ ] Other Single Zone [ ] Multiple Zone [X]

2. Name of Operator
Sohio Petroleum Company

3. Address of Operator
P.O. Box 30, Casper, WY 82602

4. Location of Well (Report location clearly and in accordance with any State requirements.*)
At surface
2341' FEL, 1480' FSL
At proposed prod. zone
Same

RECEIVED
JUL 9 1984
DIVISION OF OIL GAS & MINING

5. Lease Designation and Serial No.
ML-40438

6. If Indian, Allottee or Tribe Name
NA

7. Unit Agreement Name
Christmas Creek II

8. Farm or Lease Name
Christmas Creek

9. Well No.
26-15

10. Field and Pool, or Wildcat
Wildcat

11. Sec., T., R., M., or Blk. and Survey or Area
Sec. 26, T2N, R10E

12. County or Parrish 13. State
Summit Utah

14. Distance in miles and direction from nearest town or post office*
36 miles south of Evanston, WY

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drlg. line, if any) 320'

16. No. of acres in lease 160

17. No. of acres assigned to this well Unspaced

18. Distance from proposed location* to nearest well, drilling, completed, or applied for, on this lease, ft. - -

19. Proposed depth ±8600'

20. Rotary or cable tools Rotary

21. Elevations (Show whether DF, RT, GR, etc.)
8912.5' GR

22. Approx. date work will start*
August 1, 1984

23. PROPOSED CASING AND CEMENTING PROGRAM

Size of Hole	Size of Casing	Weight per Foot	Setting Depth	Quantity of Cement
17½"	13-3/8"	48	300'	600 sx.
12¼"	9-5/8"	40	5300'	2800 sx.
8½"	7"	23, 26	8600'	400 sx.

20" conductor casing will be set @ 30' G.L. and be cemented back to surface.

The proposal is to drill to ±8600'. Casing will be set and cemented as outlined above. Formations of interest include: Nugget - 4000'; Ankareh - 4400'; Thaynes - 5200'; Woodside - 6000'; Phosphoria - 6700'; Weber - 7200'; Madison - 8500'. Cores and DST's are possible in the Thaynes and Phosphoria.

BOP information (see attached diagrams): During drilling, pipe rams will be operated daily and noted on the drilling report. The blind rams will be operated after each trip.

Attachments: 1) Surveyor's plat, 2) BOP diagram. Utah Statewide Bond 00683449 - 1-1 84 is in force.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.
Signed R.D. Vassar Title Dist. Drlg. Supt. Date 7/3/84

(This space for Federal or State office use)

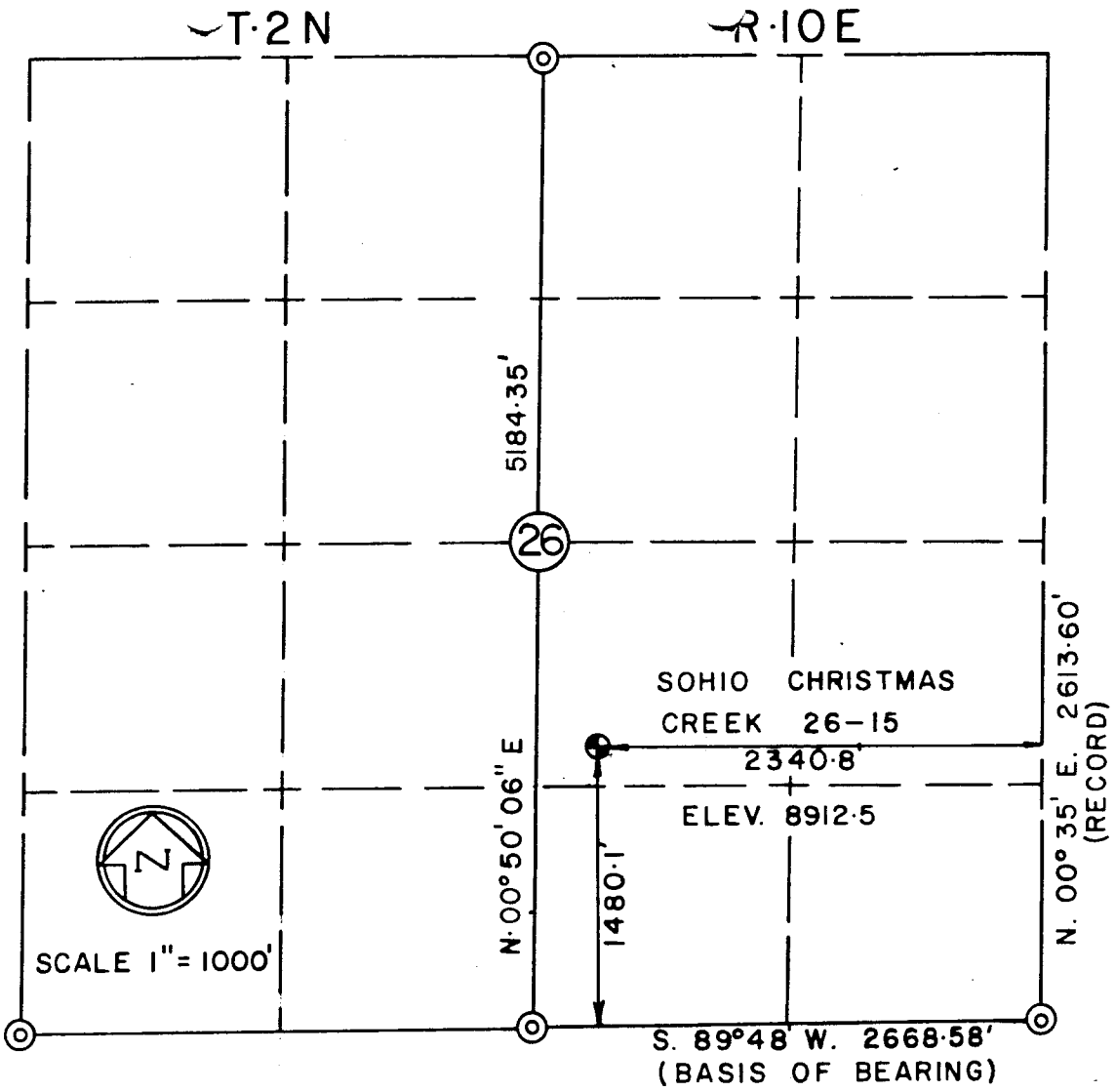
Permit No.

APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING
DATE: 7/13/84
BY: John R. Baza

Approved by
Conditions of approval, if any:
Title
Date

*See Instructions On Reverse Side

CONFIDENTIAL



◎ INDICATES G·L·O· BRASS CAP FOUND

SOHIO CHRISTMAS CREEK 26-15 is located in the NW/4SE/4 of Section 26, Township 2 North, Range 10 East of the Salt Lake Meridian, Summit County, Utah. The elevation of 8912.5 is based on a spot elevation of 8810 at the road intersection near the N/4 corner of Section 26, Township 2 North, Range 10 East as shown on the U.S.G.S. Christmas Meadows Quad.

CERTIFICATE OF SURVEYOR

STATE OF WYOMING)
COUNTY OF SUBLETTE)

I, ROBERT A. HARROWER of Pinedale, Wyoming, hereby certify that this map was made from notes taken during an actual survey made under my supervision on June 1, 1984, and that it correctly represents the survey as shown.

Registered Professional Engineer and Land Surveyor
No. 5441
ROBERT A. HARROWER
State of Utah

ROBERT A. HARROWER, UTAH P.E. & L.S. 5441

RIO VERDE Engineers · Surveyors Environmental Planners PINEDALE WYOMING	SOHIO	SOHIO PETROLEUM COMPANY CHRISTMAS CREEK 26-15 NW/4SE/4 of Sec. 26, T. 2 N., R. 10 E. SUMMIT COUNTY, UTAH -- WASATCH NATIONAL FOREST LOCATION PLAT	REVISION	DATE 7/02/84 J.O. 1102 SHEET 1 of 2

CONFIDENTIAL

OILFIELD SAFETY INC.

CONTINGENCY PLAN

This Contingency Plan was written

specifically for:

SOHIO PETROLEUM COMPANY

P. O. BOX 30

CASPER, WYOMING 82602

SAFETY PROGRAM AND EMERGENCY EVACUATION PLAN

CHRISTMAS CREEK #26-15 LOCATION C

SECTION 26 TOWNSHIP 2N RANGE 10E

2341' FEL 1480' FSL

SUMMIT COUNTY, UTAH

TABLE OF CONTENTS

THIS PLAN IS SUBJECT TO UPDATING

PURPOSE OF PROGRAM

It is Sohio Petroleum Company's policy in all operations where high pressure and toxic gases may be encountered to do everything reasonably possible to ensure the safety of its employees or anyone on the job site. This brochure has been prepared to outline the operational procedures to be followed in order to provide the maximum safety and comfort for all persons near the operation.

Hydrogen Sulfide is extremely hazardous to normal oil field operations due to its capability (1) destroying life at very low concentrations and (2) of causing instantaneous failure of high-strength metals. Drilling and producing operations of hydrocarbons containing toxic gases can, however, be performed safely and without incident when the necessary precautions are taken and the outlined safety procedures are followed. It is imperative that sulfide resistant materials be used, that the proper safety equipment be used, that this equipment be properly maintained, and that all safety regulations be complied with.

The procedures outlined are for your safety and the safety of all others; therefore, it is mandatory that each individual give his one hundred per cent cooperation.

RESPONSIBILITIES AND DUTIES

ALL PERSONNEL

1. It is the responsibility of all personnel on location to familiarize themselves with the safety procedures.
2. All personnel will attend to their personal safety first.
3. Help anyone who may be injured or overcome by toxic gases. The Drilling Supervisor will assign someone to administer first aid to unconscious person (s).
4. Report to the designated "SAFE BRIEFING AREA" and follow the instructions of the Drilling Supervisor.

DRILLING SUPERVISOR

1. It is the responsibility of the Drilling Supervisor to see that these safety and emergency procedures are observed by all personnel on location.
2. The Drilling Supervisor will advise Oilfield Safety Inc. whenever the procedures as specified herein are complied with or cannot be followed.
3. The Drilling Supervisor will notify the Safety Advisor at least two weeks before the safety equipment specified herein is needed.
4. The Drilling Supervisor will keep the number of personnel on location to a minimum during hazardous operations.
5. The Drilling Supervisor is responsible for designating the "SAFE BRIEFING AREA". This area will change depending upon wind direction and must be redesignated as soon as a wind change occurs.
6. If an unexpected emergency occurs or the H2S alarm sounds, the Drilling Supervisor will assess the situation and will advise all personnel what condition exists.
7. When it is necessary to secure the location, the access road to location will be blocked.

TEMPORARY SERVICE PERSONNEL

All service personnel, such as cementing crews, logging crews, specialists, mechanics, and welders will comply with OSHA and Sohio Petroleum Company's Drilling Foreman.

VISITORS

1. VISITORS will be restricted, unless accompanied by the SOHIO PETROLEUM COMPANY'S DRILLING FOREMAN when Hydrogen Sulfide might be encountered.

2. VISITORS and non-essential personnel will be prohibited from remaining in or entering contaminated areas where the Hydrogen Sulfide concentration in the atmosphere exceeds 20 ppm.

NOTE: WHEN HYDROGEN SULFIDE MIGHT BE ENCOUNTERED NO PERSONNEL ON LOCATION WILL BE PERMITTED TO SLEEP IN VEHICLES.

DIRECTIONS TO CHRISTMAS CREEK #26-15 LOCATION C

Proceed South from Evanston, Wyoming city limits on Highway #150 approximately 30 miles to East Fork Road. (Approximately .5 mile past Bear River Station and Cafe.)

Turn Left and go approximately 2 miles

Turn Right (at Bear River Boy Scout Camp Sign) and go 3 miles

Turn Left and go approximately 1 mile on road into location.

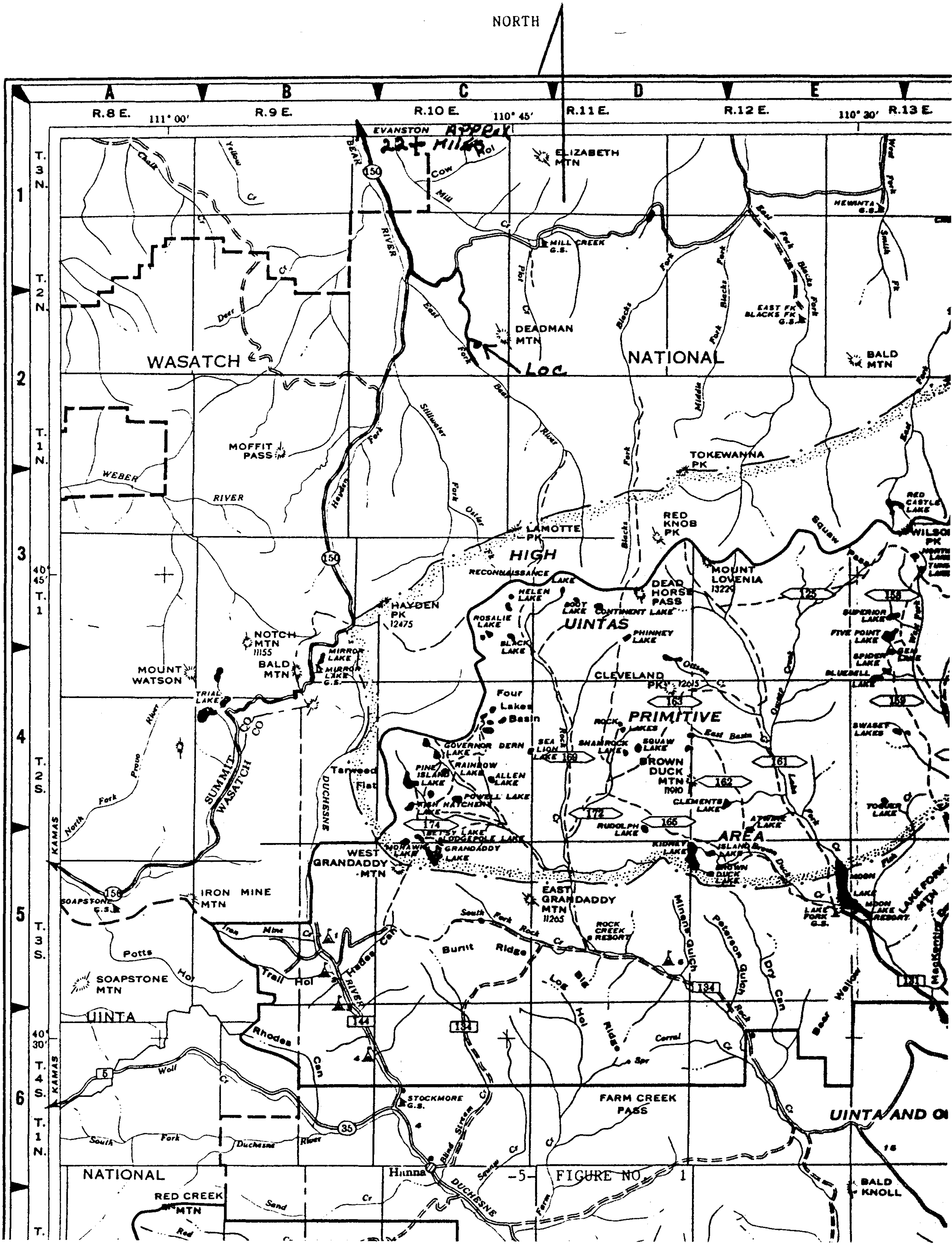

NORTH
A
B
C
D
E
R.8 E.
R.9 E.
R.10 E.
R.11 E.
R.12 E.
R.13 E.
111° 00′
110° 45′
110° 30′
T. 3 N.
T. 2 N.
T. 1 N.
T. 1 S.
T. 2 S.
T. 3 S.
T. 4 S.
40° 45′
40° 30′
EVANSTON
Appr. 22+ Miles
Loc
ELIZABETH MTN
MILL CREEK G.S.
HEWINTA G.S.
EAST FK BLACKS FK G.S.
DEADMAN MTN
BALD MTN
WASATCH
NATIONAL
MOFFIT PASS
WEBER RIVER
TOKEWANNA PK
RED KNOB PK
LAMOTTE PK
HIGH
RECONNAISSANCE LAKE
MOUNT LOVENIA 13229
DEAD HORSE PASS
HAYDEN PK 12475
UINTAS
NOTCH MTN 11155
BALD MTN
MIRROR LAKE
MIRROR LAKE G.S.
MOUNT WATSON
TRIAL LAKE
CLEVELAND PK 12615
PRIMITIVE
Four Lakes Basin
GOVERNOR DERN LAKE
PINE ISLAND LAKE
RAINBOW LAKE
ALLEN LAKE
POWELL LAKE
HIGH HATCHEN LAKE
SEA LION LAKE
SHAMROCK LAKE
SQUAW LAKE
BROWN DUCK MTN 11010
CLEMENTS LAKE
RUDOLPH LAKE
ATWINE LAKE
AREA
KIDNEY LAKE
ISLAND LAKE
BROWN DUCK LAKE
BETSY LAKE
LODGEPOLE LAKE
MOHAWK LAKE
GRANDADDY LAKE
WEST GRANDADDY MTN
EAST GRANDADDY MTN 11265
Tarweed Flat
SUMMIT
WASATCH
DUCHESNE
IRON MINE MTN
SOAPSTONE G.S.
SOAPSTONE MTN
Potts Hol
Trail Hol
Burnt Ridge
ROCK CREEK RESORT
Miners Gulch
Peterson Gulch
Dry Can
Bear Wallow
MOON LAKE
MOON LAKE RESORT
LAKE FORK G.S.
LAKE FORK MTN
UINTA
Rhodes Can
STOCKMORE G.S.
FARM CREEK PASS
UINTA AND OU
South Fork Duchesne River
Wolf Cr
Hanna
NATIONAL
RED CREEK MTN
BALD KNOLL
KAMAS
150
156
144
134
35
6
125
159
163
161
162
169
172
174
165
131

FIGURE NO. 1

THE DRILL SITE

The location as shown in Figure 2 is planned in order to obtain the maximum safety benefits consistent with the rig configuration, well depth, and prevailing winds.

1. Through the use of several maps, the area within a two-mile radius of the location has been surveyed and contacts with all permanent residents have been made. Except in a dead calm and a tremendous release of high concentration gases, the probability of lethal dosages beyond one mile is extremely unlikely. Note on the rig layout plat, Figure 2, the direction of prevailing winds.

2. The location of houses, schools, roads, and anything where people may be present and who might need to be warned or evacuated in a crisis have been surveyed. This information with names and telephone numbers are keyed and listed on page 11 and Figure 3 for use if evacuation might be necessary should an emergency develop.

3. The drilling rig, see Figure 2, will be situated on such a location that prevailing winds blow across the rig toward the flare pit.

4. Two (2) SAFETY BRIEFING AREAS will be established not less than 200 feet from the wellhead and in locations so that at least one area will be up-wind of the well at all times.

5. Protective equipment will be stored in a safety trailer located at one of the BRIEFING AREAS. Such equipment will include air packs and masks, first aid kits, eye wash station, stretchers, hydrogen sulfide hand operated detectors and resuscitators. In the event of an emergency, personnel should assemble at the up-wind BRIEFING AREA for instructions from their supervisor.

6. Wind socks or streamers will be utilized to give wind directions at several elevations; i.e., tree top, derrick floor level, and 6 to 8 feet above ground level. PERSONNEL SHOULD DEVELOP THE PRACTICE OF ROUTINE OBSERVATION OF WIND DIRECTION.

7. Explosion proof ventilating fans (bug blowers) will be positioned to ensure adequate circulation at the derrick floor, cellar area, shale shaker, and any other location where hydrogen sulfide might accumulate and need to be dissipated.

8. When approaching a depth where Hydrogen Sulfide may be encountered, the MUD WILL BE MAINTAINED IN AN OVERBALANCED CONDITION TO PRECLUDE THE ENTRY OF FORMATION FLUIDS INTO THE WELLBORE and thereby restrict the Hydrogen Sulfide to be treated to that contained in the formation drilled.

9. When approaching a depth where Hydrogen Sulfide may be encountered, appropriate warning signs will be posted on all access roads to the location and at the foot of all stairways to the derrick floor.

10. Reliable 24-hour radio and telephone communication will be available at the rig. Emergency telephone numbers will be prominently posted: Sheriff's Department, Ambulance, Hospitals, Doctors, and Operators' Supervisory Personnel.

13. Filter-type gas masks are not suitable for use on drilling rigs. Pressure demand, airpack type masks will be provided for use in any Hydrogen Sulfide concentration. The pressure demand, airpack types have alarms that signal when the air supply is getting low. They are easily and quickly serviced with replacement bottles. They are not physically exhausting to use, are rugged and dependable, and require little maintenance.

14. Masks will be stored on racks and protected from the weather. Rig crew equipment will be located at readily accessible location on the rig floor. Sufficient masks will be stored in safety sheds for every person working in the area. For hygienic reasons, masks are to be washed and sterilized at regular intervals. Employees working derricks will be equipped with a connection through a quick-disconnect from his system of breathing air so that if he must evacuate the derrick, he will have a full air bottle with his mask. An eight outlet air supply manifold will be installed on the rig floor for continuous use by crews and supervisory personnel working in a "masks-on" situation. The multi-bottle supply cylinder is to be located at approximately 200 ft. from the well. A minimum of 3,600 cu. ft. compressed breathing air will be on location at all times.

15. An alarm system which can be heard during operations and which can be activated from several points if gas is detected will be installed. When the alarm is sounded, personnel must put on masks or move to the BRIEFING AREA designated as safe.

16. There will be No Smoking on rig floor or near Wellhead. Designated Smoking Areas will be provided by your Supervisor.

17. Safety meetings and training sessions will be held at frequent intervals by the Safety Advisor, the Drilling Supervisor, or the Rig Supervisor. All persons required to work on location will be thoroughly familiar with the use, care and servicing of the following: Personal protective equipment, resuscitation equipment, and gas detection equipment. New employees and

those who are present on sporadic basis (i.e. geologists, engineers, service personnel, etc.) will be indoctrinated in the location and use of personal equipment before commencing work.

18. All electric lighting, wiring and electrical devices within 100 feet of the well will be put in vapor-proof condition to minimize the possibility of explosion.

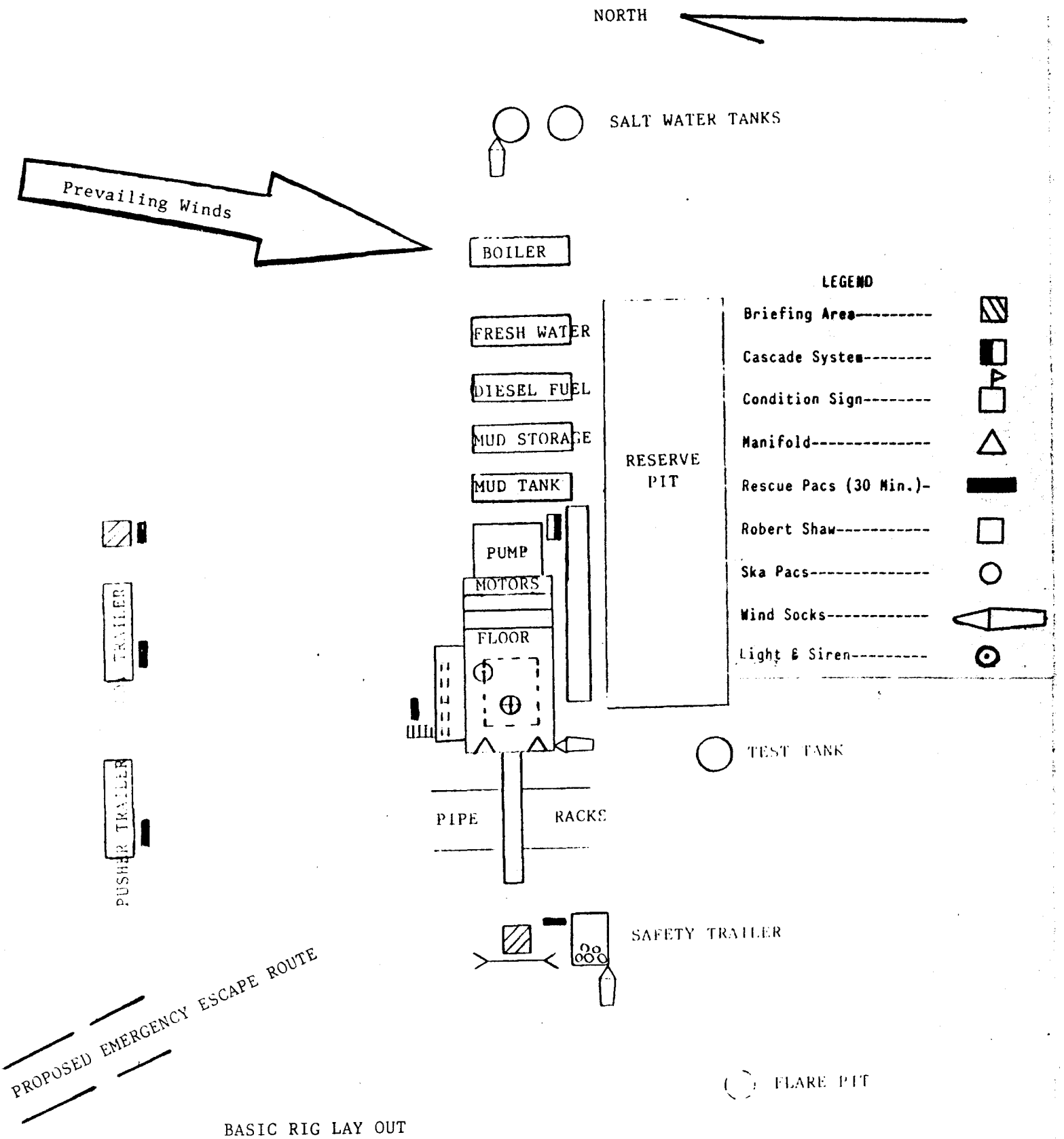
19. Blowout preventers, particularly the ram carrier rods, will be dressed with sour gas trimmed for hydrogen sulfide service. Choke manifolds will be of similar materials.

20. Inspection of installation, operation, and testing of blowout preventers, choke manifolds, etc., dressed for Hydrogen Sulfide services, will be conducted regularly.

21. An accurate bottom hole location by use of multishot or single shot directional surveys will be maintained so that the well can be intercepted if it becomes necessary.

22. Every person involved in the operation will be informed of the characteristics of Hydrogen Sulfide and its dangers, safe procedures to use when it is encountered, and recommended first aid procedures. This will be done through frequent safety talks and training sessions.

23. Personnel with punctured ear drums shall not be permitted to work in an H2S atmosphere.



BASIC RIG LAY OUT

SUPPLEMENT WILL FOLLOW
WHEN RIG CHOSEN

PROPOSED ACCESS ROAD

FIGURE NO. 2

RESIDENTS WITHIN TWO MILE RADIUS OF CHRISTMAS CREEK #26-15 LOCATION C

MAP REFERENCE NUMBER	NAME OF RESIDENT	NUMBER OF PERSONS	TELEPHONE NUMBER
1	Boy Scout Camp	Contact Bear River Ranger Station	(801) 642-6662

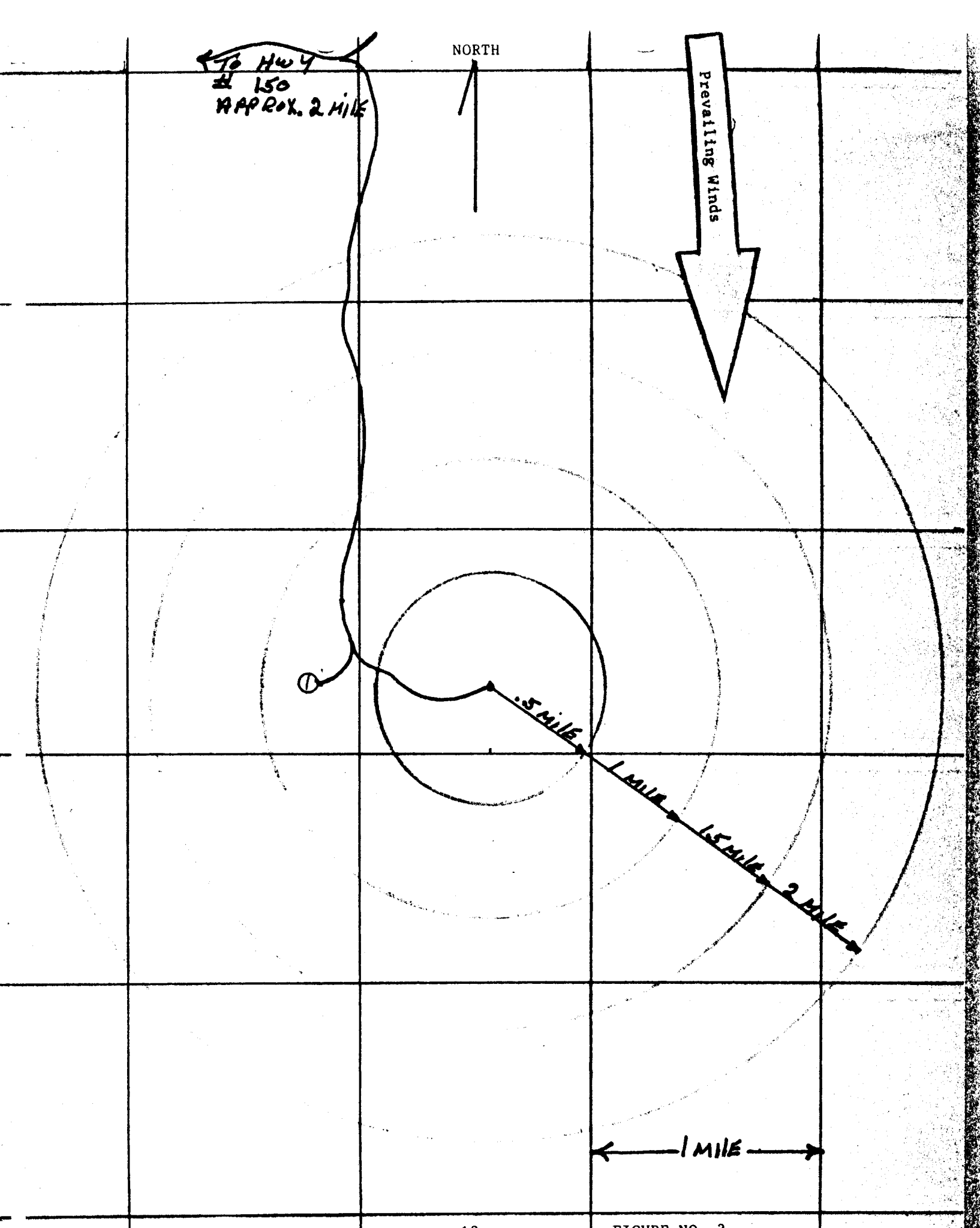

To Hwy
150
APROX. 2 MILE
NORTH
Prevailing Winds
.5 MILE
1 MILE
1.5 MILE
2 MILE
1 MILE

FIGURE NO. 3

NAMES AND DUTIES OF PERSON WITH PRIME RESPONSIBILITIES

A. SOHIO PETROLEUM COMPANY — P. O. Box 30, Casper, Wyoming 82602

W. H. Ward	District Manager	
Business Phone	(307) 237-3861	
Home Phone	(307) 266-6387	
R. "Dick" Vassar	District Drilling Superintendent	
Business Phone	(307) 237-3861	
Home Phone	(307) 266-4776	
Floyd Hoffer	District Production Superintendent	
Business Phone	(307) 237-3861	
Home Phone	(307) 234-9465	

B. DRILLING CONTRACTOR

Unknown at this time

C. OILFIELD SAFETY INC.

Brent Lewis	District Manager	Montpelier, Idaho
Business Phone	(208) 847-1113	
Home Phone	(208) 945-2507	
Edwin Izatt	Safety Advisor	
Business Phone	(208) 847-1113	
Home Phone	(208) 945-2465	
C. Eugene Roth, Jr.	President	
Business Phone	(701) 774-3014	
Home Phone	(701) 572-8973	

EMERGENCY NOTIFICATION

LOCAL OFFICIALS AND MEDICAL

EVANSTON, WYOMING

SHERIFF.....(Will Dispatch).....(307) 789-2331

HOSPITAL..... 911 or .....(307) 789-2331

AMBULANCE..... 911 or .....(307) 789-2331

FIRE..... 911 or .....(307) 789-2331

POLICE.....(307) 789-9690

COALVILLE, UTAH

SHERIFF.....(Will Dispatch).....(801) 336-5561

POLICE.....(801) 336-5561

FIRE.....(801) 336-5561

AMBULANCE.....(801) 336-5561

HOSPITAL.....(801) 336-5561

AIR AMBULANCE.....(Dispatched)...Salt Lake City.....

EVANSTON RANGER DISTRICT — P. O. Box FS, Evanston, Wyoming 82930

Bernard Asay — Manager

Business Phone.....(307) 789-0045

ENVIRONMENTAL EMERGENCIES.....(801) 533-6145

EMERGENCY NOTIFICATION

BUREAU OF LAND MANAGEMENT	2370 S 2300 W. Salt Lake City, Utah 84119
Frank Snell	District Manager
Business Phone	(801) 524-5348

BUREAU OF LAND MANAGEMENT	
BRANCH OF FLUIDS AND MINERALS	136 E. South Temple Salt Lake City, Utah 84111
Edgar Guynn	Chief
Business Phone	(801) 524-3029

OIL, GAS & MINING, DIVISION OF	
Ronald J. Firth	Chief Petroleum Engineer
	4241 State Office Building Salt Lake City, Utah 84114
Business Phone	(801) 533-5771

PHYSICAL AND CHEMICAL PROPERTIES OF HYDROGEN SULFIDE H2S

1. Extremely toxic (almost as toxic as Hydrogen Cyanide and 5 to 6 times toxic as Carbon Monoxide).
2. Colorless.
3. Offensive odor, often described as that of rotten eggs.
4. Heavier than air - specific gravity 1.189 (Air = 1.000 @ 60 F.). Vapors may travel considerable distance to a source of ignition and flash back.
5. Forms an explosive mixture with a concentration between 4.3 and 46 percent by volume with auto-ignition occurring at 500 F.
6. Burns with a blue flame and produces Sulfur Dioxide (SO2), which is less toxic than Hydrogen Sulfide but very irritating to eyes and lungs and causes serious injury.
7. Soluble in both water and liquid hydrocarbons.
8. Produces irritation to eyes, throat and respiratory system.
9. Threshold Limit Valve (TLV) - Maximum of eight hours exposure.
10. Corrosive to all electrochemical series metals.
11. Boiling Point (-79 F).
12. Melting Point (-177 F).

PHYSICAL EFFECTS OF HYDROGEN SULFIDE POISONING

THE PRINCIPAL HAZARD IS DEATH BY INHALATION. When the amount of gas absorbed into the blood stream exceeds that which is readily oxidized, systemic poisoning results, with a general action on the nervous system. Labored respiration occurs shortly, and respiratory paralysis may follow immediately at concentrations of 700 ppm and above. This condition may be reached almost without warning as the originally detected odor of Hydrogen Sulfide may have disappeared due to olfactory paralysis. Death then occurs from asphyxiation unless the exposed person is removed immediately to fresh air and breathing stimulated by artificial respiration. Other levels of exposure may cause the following symptoms individually or in combinations:

a. Headache
b. Dizziness
c. Excitement
d. Nausea or gastro-intestinal disturbances
e. Dryness and sensation of pain in nose, throat and chest
f. Coughing
g. Drowsiness

All personnel should be alerted to the fact that detection of Hydrogen Sulfide solely by smell is highly dangerous as the sense of smell is rapidly paralyzed by the gas.

TREATMENT FOR HYDROGEN SULFIDE POISONING

INHALATION

As Hydrogen Sulfide in the blood oxidizes rapidly, symptoms of acute poisoning pass off when inhalation of the gas ceases. It is important, therefore, to get the victim of poisoning to fresh air as quickly as possible. He should be kept at rest and chilling should be prevented. If respiration is slow, labored, or impaired, artificial respiration may be necessary. Most persons overcome by Hydrogen Sulfide may be revived if artificial respiration is applied before the heart action ceases. Victims of poisoning should be under the care of a physician as soon as possible. Irritation due to sub-acute poisoning may lead to serious complications such as pneumonia. Under those conditions, treatment by the physician necessarily would be symptomatic. The patient should be kept in fresh air, and hygienic conditions should be watched carefully.

CONTACT WITH EYES

Eye contact with liquid and/or gas containing Hydrogen Sulfide will cause painful irritation (conjunctivitis). Keep patient in a darkened room apply ice compresses to eyes, put ice on forehead, and send for a physician. Eye irritation caused by exposure to Hydrogen Sulfide requires treatment by a physician, preferably an eye specialist. The progress to recovery in these cases is usually good.

CONTACT WITH SKIN

Skin absorption is very low. Skin discoloration is possible after contact with liquids containing Hydrogen Sulfide. If such skin contact is suspected, the area should be thoroughly washed.

EFFECTS OF HYDROGEN SULFIDE ON METAL

Hydrogen Sulfide dissolves in water to form a weak acid that can cause some pitting, particularly in the presence of oxygen and/or carbon dioxide. However, the most significant action of H_2S is its contribution to a form of hydrogen embrittlement known as sulfide stress cracking. Sulfide stress cracking is a result of metals being subjected to high stress levels in a corrosive environment where H_2S is present. The metal will often fail catastrophically in a brittle manner. Sulfide stress cracking of steel is dependent upon and determined by:

a. Strength (hardness) of the steel - the higher the strength, the greater the susceptibility to sulfide stress cracking. Steels having yield strengths up to 95,000 psi and hardness up to Rc22 are generally resistant to sulfide stress cracking. These limitations can be extended slightly higher for properly quenched and tempered materials.

b. Total member stress (load) - the higher the stress level (load) the greater the susceptibility to sulfide stress cracking.

c. Corrosive environment - corrosive reactions, acids, bacterial action, thermal degradation, or low pH fluid environment.

DRILL STEM TEST

1. DRILL STEM TESTING of Hydrogen Sulfide zones will be permitted only in daylight hours.
2. All non-essential personnel will be moved to "Safe Briefing Area".
3. Put on air mask before formation fluids are expected at the surface and continue "MASK ON" until flares are lighted and work areas test no more than 10 ppm Hydrogen Sulfide and the area has been declared safe.
4. If warranted, the use of Ammonia Hydroxide (26 Degree B'eaume Aqua Ammonia) for removing Hydrogen Sulfide from tubing or drill pipe after test.
5. Drill Stem Testing or Swabbing Fluids will be channeled through a separator to permit flaring of gas. Flare lines will be equipped with a continuous pilot light.

H2S SAFETY EQUIPMENT ON LOCATION

(PROVIDED BY SAFETY CONTRACTOR)

1. Safety Trailer with a cascade system of 10-300 cu. ft. bottles of compressed breathing air complete with high pressure manifolds, providing five men approximately 7 hours of breathing air.

2. Low Pressure Air Line (Approximately 1,000 feet depending on location). Equipped with quick connects.

3. Two low pressure manifolds w/5 man outlets, two on rig floor, one at suction tank near mixing hopper.

4. Six Scott Pressure Pac IIA, 30 minute Pressure demand breathing apparatus NIOSH, MESA and USGS approved.

5. Six Airline breathing apparatus c/w 7 cu. ft. egress cylinders

6. Six Emergency Escape Unit (Robert Shaw)

7. "TAC" H2S 3-Channel Monitor for multiple point continuous detection, each monitoring point is capable of activating remote audio and visual alarm system included.

8. One Bendix Gastec, portable hand operated pump type detector with low and high range H2S and SO2 detector tubes.

9. One OW2 Portable Oxygen Resuscitators

10. One 24 Unit First Aid Kit

11. One stretcher

12. One Eye Wash Station

13. Three Wind Socks with poles

14. One High Pressure Compressed Air Refill Hose

15. One H2S Condition Sign w/Flags

16. Two Briefing Area Signs

17. One Light Explosion Proof

18. One Siren Explosion Proof

19. Traffic Cones as needed.

20. One Fire Extinguisher

NOTE: MORE EQUIPMENT WILL BE ADDED IF WELL CONDITIONS REQUIRE.

IGNITING THE WELL

RESPONSIBILITY

THE DECISION TO IGNITE THE WELL IS THE RESPONSIBILITY OF THE DRILLING SUPERVISOR. In the event he is incapacitated, it becomes the responsibility of the Rig Superintendent. This decision should be made only as a last resort and in a situation where it is clear that

1. Human life and property are endangered.
2. No hope exists for controlling the blowout under prevailing conditions at the well.

Notify the Oilfield Safety Inc., office if time permits, but do not delay if human life is in danger.

Initiate first phase of evacuation plan.

INSTRUCTIONS FOR IGNITING THE WELL

1. Two people are required for the actual igniting operation. They must wear self-contained breathing units and have a safety rope attached. One man will check the atmosphere for explosive gases with the Explosimeter. The other man is responsible for igniting the well.
2. Primary method to ignite: 25 mm meterotype flare gun with range of approximately 500 ft.
3. Ignite upwind and do not approach any closer than is warranted.
4. Select the ignition site which is best for protection.
5. Select area for hasty retreat.
6. BEFORE FIRING, check regarding combustible gases.
7. Since Hydrogen Sulfide converts to Sulfur Dioxide, the area is not safe after igniting the well.
8. After igniting, continue emergency action and procedure as before.
9. All unassigned personnel will limit their actions to only those directed by the Drilling Supervisor.

REMEMBER: AFTER WELL IS IGNITED, BURNING HYDROGEN SULFIDE WILL CONVERT TO SULFUR DIOXIDE, WHICH IS ALSO HIGHLY TOXIC. DO NOT ASSUME THE AREA IS SAFE AFTER THE WELL IS IGNITED.

BLOWOUT PREVENTION EQUIPMENT

The closing unit should be located a safe distance from the wellbore and positioned for maximum utilization based on the prevailing wind direction.

BOP equipment will be tested in accordance with standard company practice.

All equipment will be H2S trimmed for service in sour gas environments.

SPECIAL EQUIPMENT

1. If a MUD-GAS SEPARATOR is installed, it will be installed with one or more flare lines.

2. Flare lines should be as long as practical and securely staked.

3. An automatic Hydrogen Sulfide monitor will be installed with a combination visual and audible alarm system located where it can be seen and/or heard throughout the drilling location. This system will have the capabilities of being activated from four points, which are the rig floor, cellar, shaker, and the mixing hopper.

4. The automatic monitor should be set to trigger the drilling location visual/audible alarms when the Hydrogen Sulfide concentration in the atmosphere reaches 20 ppm. Explosion proof lights and sirens will be provided at or near the rig floor and such that all personnel will be subject to visual and audible warning.

MUD ADDITIVES
DRILLING FLUID RECOMMENDATION

MUD TYPE

An overbalanced mud should be used to drill potential pay zone with necessary additives for all stabilization.

Prior to entering zone, oxygen and Hydrogen Sulfide scavengers should be added to the mud.

Quantities of H_2S Inhibitor will be stored on location.

CASING GRADES ACCEPTABLE FOR H2S SERVICE

CASING GRADE	H2S SERVICE	COMMENTS**
H-40	YES	---
K-55	YES	---
C-75	YES	---
N-80	CONDITIONAL	ABOVE 200 ^{o}F
L-80	YES	---
MN-80	YES	---
C-90	YES	---
C-95	YES	---
S-95	NO	ABOVE 200 ^{o}F
SOO-95	NO	ABOVE 200 ^{o}F
S-105	NO	ABOVE 200 ^{o}F
SOO-90	YES	ABOVE 200 ^{o}F
P-110	NO	ABOVE 200 ^{o}F
S-135	NO	ABOVE 200 ^{o}F
V-150	NO	ABOVE 200 ^{o}F

* Service conditions for any H2S environment.

** Denotes usable grades above 200 ^{o}F.

DRILL PIPE GRADES FOR H2S SERVICE

GRADE	H2S SERVICE
D	YES
E	YES
X-95	YES
G-105	NO
S-135	YES
ALUMINUM	YES

EMERGENCY DRILLS

1. Hydrogen Sulfide Alarm Drills

The Safety Advisor will conduct frequent H2S alarm drills for each crew by injecting a trace of H2S where the detectors will give an alarm. Under these conditions all personnel on location will assemble at the "Safe Briefing Area". The Safety Advisor will need to be notified if more personnel are on location than during normal operations. A head count will be taken at this time to determine if rescue operations are indicated. A "Masks On" policy will prevail until the all clear is sounded. These drills will be implemented as frequently as required to familiarize all personnel with the "Drills".

NOTICE TO LESSEES AND OPERATORS OF

FEDERAL AND INDIAN ONSHORE OIL AND GAS LEASES

(NTL-10)

HYDROGEN SULFIDE OPERATIONS

This notice is issued pursuant to the authority prescribed in 30 CFR 221.5, 221.9, and 221.18. Lessees and operators of onshore Federal and Indian (except Osage) oil and gas leases, or of fee and State oil and gas leases committed to federally supervised cooperative agreements concerned with oil and gas operations, shall comply with the following requirements for conducting operations involving sour oil or gas. In general, any applications hereunder shall be filed with the same office to which Applications for Permit to Drill or Sundry Notices are filed. The requirements of this Notice will be administered by, and approvals obtained from, the Oil and Gas District Engineers, except in Alaska where administration will be handled by the Area Oil and Gas Supervisor.

This Notice will be effective whenver drilling, workover, producing, injection, gathering, transportation, storage, and processing of hydrocarbons related to field operations may reasonably be expected to cause concentrations of hydrogen sulfide (H_2S) gas to escape in quantities which could be harmful to life. Each application to conduct such operations must fully describe the manner in which requirements of this Notice will be implemented. Existing facilities not meeting the requirements of this Notice must be brought up to conformance standards within 6 months of the effective date of this Notice.

The requirements relating to drilling operations are applicable in areas where problems with H_2S are known to exist or are expected, or in wildcat areas where such conditions cannot be anticipated. It is not the intent of this Notice to invoke the requirements in areas where small quantities of H_2S are expected, especially under low pressure, and are routinely and successfully contained. Other operations (production, transportation, etc.), will be evaluated on known conditions, such as volume of pro-

duction, concentration of H_2S, geographical features, and relative location to populated areas. The District Engineer may, after consideration of all factors, require safety features which are more or less stringent than required by this Notice. However, nothing contained in this Notice is intended to supersede any applicable State or Federal requirements which may be more stringent.

I. General

A. Each operator shall determine the H_2S concentration in the gaseous mixture of each operation or system and report the results to the District Engineer. The requirements of this Notice shall not apply to systems in which the H_2S concentration is less than 100 ppm.

B. For all operations with concentrations of 100 ppm or greater, the operator shall determine and report the radius of exposure, except in the cases of storage tanks, by the following Pasquill-Gifford equation, or by other methods approved by the District Engineer:

(1) For determing the location of the 100 ppm radius of exposure:

$$X = [(1.589)(H_2S)(Q)]^{(0.6258)}$$

(2) For determing the location of the 500 ppm radius of exposure:

$$X = [(0.4546)(H_2S)(Q)]^{(0.6258)}$$

Where: X = radius of exposure of feet;

Q = maximum volume determined to be available for escape in cubic feet per day (at standard conditions of 14.73 psia and 60^{o} F);

H_2S = mole fraction of hydrogen sulfide in the gaseous mixture available for escape.

C. The volume used as the escape rate in determining the radius of exposure shall be that specified below, as applicable:

(1) The maximum daily rate of gas containing H_2S handled by that system element for which the radius of exposure is calculated;

(2) For existing gas wells, the current adjusted open-flow rate, or operator's estimate of the well's capacity to flow against zero back-pressure at the wellhead;

(3) For new wells drilled in development areas, the escape rate shall be determined by using the current adjusted open-flow rate of offset wells, or the field average current adjusted open-flow rate, whichever is larger;

(4) For the drilling of a well in an area where insufficient data exist to calculate a radius of exposure, but where H_2S may be expected, a 100 ppm radius of exposure equal to 3000 feet shall be assumed. A lesser assumed radius may be considered from a written request with adequate justification.

D. The radius of exposure shall be determined on all systems and special precautions taken, as defined in this Notice, when any of the following conditions apply:

(1) The 100 ppm radius of exposure is in excess of 50 feet, and includes any part of a city, town, village, park, dwelling, school bus stop, or similar area that is expected to be populated;

(2) The 500 ppm radius of exposure is greater than 50 feet, and includes any part of a road owned by and maintained for public access or use;

(3) The 100 ppm radius of exposure is greater than 3000 feet.

II. Drilling and Workover Requirements

For drilling operations, all safety equipment will be installed and operated to completely implement safety procedures when drilling has reached a depth approximately 1500 feet above the zone containing, or suspected of containing, H_2S. If H_2S was not anticipated in the Application for Permit to Drill, but is encountered, the Operator shall immediately contain the gas, suspend drilling operations, obtain materials and safety equipment to bring the operation into compliance, and notify the District Engineer.

Additional safety measures may be required by the District Engineer in areas which are extremely hazardous, or require special treatment. Also, the District Engineer may require the use of manual H_2S detectors when operating in areas containing H_2S in any quantity. Test results will be recorded and reported in the manner prescribed by the District Engineer.

All locations shall be planned to obtain the maximum safety benefits consistent with the rig configuration, terrain, prevailing winds, etc. The locations of houses, schools, roads, recreational areas, etc., where people could be present within a three mile radius of the drilling location will be mapped. The drilling rig shall, when possible, be situated so prevailing winds blow across the rig toward the mud tanks and reserve pit. Where possible, or as dictated by prevailing winds. If an alternate road is not possible, a footpath will be provided and clearly marked to a safe area.

The safety requirements of this section are included in the three categories: Personnel Protection (on-site), Public Protection (Contingency Plan), and Operating Equipment, as follows:

A. Personnel Protection

(1) Training Program

(a) All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, shall be informed of the hazards of H_2S. They shall also be instructed in

the proper use of personnel safety equipment and the use of H_2S detectors and alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.

(b) A weekly drill and training session shall be conducted and recorded on the driller's log, for all personnel in the working crew. The instruction shall include first aid procedures, maintenance and use of protective breathing equipment, use of retrieval ropes with safety harnesses, and the value of working in pairs.

(c) At least two briefing areas must be designated for assembly of personnel during emergency conditions, located so one is upwind of the well at all times. The most upwind of these will be designated as the "Safe Briefing Area". Personnel should be trained to practice routine observation of wind direction.

(d) One person, who regularly performs duties on the drilling facility, shall be responsible for the overall operation of on-site safety and training programs; he will be designated and identified to all on-site personnel.

(2) Personnel Protective Equipment

(a) All working personnel on a facility shall be equipped with proper protective-breathing apparatus. The operator shall provide such equipment for the normal number of personnel involved in the operation. The operator is not required to furnish protective-breathing equipment for service personnel, but he is required to inform service contractors of the necessity of having this equipment, when called to the location. Lightweight, escape-type

self-contained breathing apparatus with a minimum of 10 minute's supply must be maintained at an easily accessible location for the derrickman, and at any other location where escape from an H_2S atmosphere would be difficult. Additional protective breathing apparatus of the pressure-demand or continuous-flow type (full face piece supplying breathing quality air for an extended period while maintaining a slight pressure inside the system) shall be provided for all essential crew members. Such equipment will conform to Occupational Safety and Health Administration Standards 29 CFR 1910.132, Subpart I, Personal Protective Equipment, and American National Standard Practices for Respiratory Protection Z88.2.

(b) Storage of protective-breathing apparatus shall be planned to assure at least one available apparatus regardless of current wind conditions.

(c) Each system must have an alarm signal for low air supply.

(d) Personnel with punctured ear drums shall not be permitted to work in an H_2S atmosphere.

(e) Additional personnel safety equipment must be available for use:

(i) Chalk boards and note pads for communication;

(ii) First-aid supplies;

(iii) Resuscitators;

(iv) Litter;

(v) Harnesses and lifelines;

(vi) Wind direction socks or streamers.

(3) Hydrogen Sulfide Detection and Monitoring Equipment

Each facility shall have an H_2S detection and monitoring system that activates audible and visible alarms when the concentration of H_2S reaches the threshold limit value of twenty parts per million in air. This equipment must have a rapid response time and be capable of sensing a minimum of five parts per million H_2S in air, with at least three sensing points located at the most critical areas where H_2S might accumulate. The detection system must be intrinsically safe for hazardous locations, and installed, maintained, and calibrated in accordance with the manufacturer's recommendations. Portable H_2S detection will also be available for all working personnel. After H_2S has been detected by any device, frequent inspections of all areas of poor ventilation shall be made. The sense of smell should never be relied upon to detect the presence of H_2S.

(4) Visible Warning System

Equipment shall be installed at prominent locations to indicate wind direction at all times. At least three such wind socks or streamers will be located at separate elevations: i.e., near ground level, rig floor, and treetop height. Operational danger signs shall be displayed on each side of the rig, and at least two rectangular red flags shall be visible to approaching personnel. Each sign shall be painted a high visibility yellow, with black lettering of sufficient size to be readable at a reasonable distance from the facility. The sign shall indicate:

DANGER-POISON GAS - H_2S

and in smaller lettering:

Do Not Approach If Red Flag
is Flying.

All signs and flags shall be illuminated under conditions of poor visibility and at night. These signs and flags will indicate the following conditions and requirements:

(a) Moderate danger. When the concentration reaches 20 ppm H_2S, the signs will be displayed. The detection efforts shall be intensified, and steps taken to eliminate or neutralize the condition.

(b) Intermediate danger. When H_2S is determined to be in the 20-100 ppm range, protective-breathing apparatus shall be worn by all working personnel, and all non-working personnel moved to safe areas.

(c) Extreme danger. When H_2S has exceeded 100 ppm concentration, the flags shall be hoisted, in addition to the displayed signs. All non-essential personnel or all personnel (as appropriate) shall be evacuated at this time.

(5) Ventilation Equipment

All ventilation fans shall be explosion-proof and situated in areas where H_2S may accumulate. Moveable fans shall be provided in work areas to disperse H_2S vapors. The rig layout should be planned to achieve maximum benefit from natural ventilation.

B. Public Protection

When the conditions defined in Section I. D. exist, special precautions shall be taken to alert and protect the public, following the accidental release of a potentially hazardous volume of hydrogen sulfide.

(1) Contingency Plan

A written contingency plan, providing details of action to alert and protect the public in the event of an accidental release of H_2S, shall be submitted prior to the commencement of operations. The contingency plan must be activated immediately after detection of an accidental release of a potentially hazardous volume of H_2S. The plan will include the following:

(a) The responsibilities and duties of key personnel, and instructions for alerting the public and requesting assistance;

(b) A list of names and telephone numbers of residents and responsible parties of occupied public buildings within the area of exposure;

(c) A telephone call list for requesting assistance from law enforcement, fire department, and medical personnel; this list shall also include State and Federal agencies as required;

(d) A 3-mile radius plat of all private and public dwellings and other areas where the public might reasonably be expected;

(e) In an area of high density population, or in other special cases, the District Engineer, USGS, will require more stringent plans to be developed.

(2) Critical Operations and Curtailment Plans

Certain operations performed under drilling and workover conditions are more critical than others with respect to the containment of potentially hazardous gasses; therefore, the District Engineer, U.S. Geological Survey, may require the curtailment of certain operations for the protection of the public. At the time the Application for Permit to Drill is submitted to and approved by the District Engineer, plans for critical

operations will be formulated. Prior to commencement of a critical operation, subsequent notices must be given to the District Engineer.

C. Operating Procedures and Equipment

(1) General Operations

Drilling operations in H_2S areas shall be subject to the folloiwng requirements:

(a) Drill string trips or fishing operations:

Every effort shall be made to pull a dry drill string while maintaining well control. If it is necessary to pull the drill string wet after penetration of H_2S bearing zones, increased monitoring of the working area shall be provided, and protective-breathing apparatus worn.

(b) Circulating bottoms-up from a drilling break, cementing operations, logging operations, or well circulation while not drilling.

After penetration of an H_2S bearing zone, increased monitoring of the working area shall be provided, and protective-breathing apparatus worn by those personnel in the working area at least 15 minutes before and after bottoms-up.

(c) Coring operations in H_2S-Bearing Zones:

Personnel protective-breathing apparatus shall be worn 10-20 stands in advance of retrieving the core barrel. Cores to be transported shall be sealed and marked for the presence of H_2S.

(d) If H_2S-bearing zones are encountered while drilling with air or gas as the circulating medium, the well shall be killed with mud, and drilling continued, using mud as the circulating medium.

(e) Abandonment or temporary abandonment operations:

Internal well-abandonment equipment shall be designed for H_2S service.

(f) Logging operations after penetration of known or suspected H_2S-Bearing Zones:

Mud in use for logging operations shall be conditioned and treated to minimize the effects of H_2S on the logging equipment, or the logging equipment designed for H_2S service.

(g) Gas-cut mud or well kick from H_2S-Bearing Zones:

Protective-breathing apparatus shall be worn when an H_2S concentration of 20 parts per million is detected. Should a decision be made to circulate out a kick, protective-breathing apparatus will be worn prior to and subsequent to bottoms-up, and at any time during an extended kill operation when the concentration of H_2S becomes hazardous to personnel (as defined in paragraphs II.A.(4)).

(h) Drill string precautions:

Precautions will be taken to minimize drill string stresses caused by conditions such as excessive dogleg severity, improper stiffness ratios, improper torque, whip, abrasive wear on tool joints, and joint imbalance. American Petroleum Institute Bulletin RP 7G will be used as a guideline for drill string precautions. Tool-joint

compounds containing free sulphur shall not be used. Proper handling techniques shall be used to minimize notching, stress concentrations, and possible drill pipe failures.

(i) Flare system:

The flare system shall be designed to safely gather and burn H_2S gas. Flare lines will be located as far from the operating facility as feasible, and in a manner to compensate for wind changes. The flare system shall be equipped with a pilot and an automatic igniter; where noncombustible gas is vented, the system must be provided supplemental fuel to burn H_2S.

(j) Kill line:

A kill line of ample strength, securely anchored, shall be laid to the wellhead from a safe location for emergency pumping into the well.

(2) Mud Program

(a) Either water- or oil-base muds are suitable for use.

(b) A pH of 10.0 or above shall be maintained in a waterbase mud system to control corrosion and prevent sulfide stress cracking.

(c) Sufficient quantities of additives shall be maintained on location to add to the mud system to scavenge and/or neutralize H_2S.

(d) Corrosion inhibitors may be applied to the drill pipe or to the mud system as a safeguard, in addition to the protection by pH control mentioned above.

(e) Drilling mud containing H_2S gas shall be degassed at an optimum location for the rig configuration. These gases will be piped into

the flare system and burned at a remote location.

(f) The mud shall be maintained in an overbalanced condition to preclude the entry of formation fluids containing H_2S into the wellbore.

(3) Kick detection and well control

All efforts will be made to prevent a well kick resulting from gas-cut mud, drilling breaks, lost circulation, or trips for bit change.

In the event of kick, the disposal of the well influx fluids will be accomplished by one of the following alternatives, giving consideration to personnel safety, and environmental and equipment damage:

(a) Alternative A.

To control the kick by using appropriate well-control techniques within the pressure limits of well equipment (drill pipe, casing, wellhead, blowout preventers, etc.). The disposal of H_2S and other gases shall be through pressured or atmospheric mud-gas separator equipment, depending on volume, pressure, and concentration of H_2S gas. The equipment shall be designed to recover drilling mud, and to vent to the atmosphere and burn the separated gases. The mud system shall be treated to neutralize H_2S and restore and maintain the proper mud quality.

(b) Alternative B.

To contain the well fluid influx by shutting in the well and pumping the fluids back into the formation.

(4) Testing in an H_2S Environment

(a) Procedures.

(i) Testing shall be performed with a minimum number of personnel in the immediate vicinity of the test using equipment to

safely and adequately perform the test and maintain related equipment and services. Except with prior approval by the District Engineer, USGS, drill-stem testing of H_2S zones will be conducted duﬁing daylight hours only.

(ii) Prior to initiation of the test, special safety meetings will be conducted for all affected personnel, with emphasis on the use of personnel protective-breathing apparatus, first-aid procedures, and Contingency Plan procedures.

(iii) During the test, the use of H_2S detection equipment shall be intensified. All produced gases will be vented and burned through a flare system which meets the requirements of paragraph II.C.(1)(j). Gases from stored test fluids will be vented into the flare system.

(iv) "No Smoking" rules shall be enforced.

(b) Equipment.

(i) Drill-stem test tools, wellhead equipment, and other testing facilities shall be suitable for H_2S service.

(ii) Tubing which meets the requirements for H_2S service may be used for drill stem testing. The water cushion shall be thoroughly inhibited to prevent H_2S corrosion. The test string shall be flushed with fluid to neutralize H_2S after completion of the test.

(iii) All surface test units and related equipment will be designed for H_2S service; only competent personnel, trained in the hazardous

effects of H_2S, shall be utilized in these tests.

(5) Metallurgical Equipment Considerations

Equipment used in drilling zones bearing H_2S, or in handling production containing H_2S, could be susceptible to the phenomena variously known as: sulfide stress cracking, hydrogen embrittlement, stress corrosion cracking, and/or H_2S embrittlement. To resist or prevent these phenomena, the equipment will be constructed of material whose metallurgical properties are chosen after considering both the working environment and the anticipated stresses. The metallurgical properties include the grade of steel, the processing (rolled, normalized, tempered, and/or quenched), and the resulting strength properties. The working environment shall include the H_2S concentrations, the well fluid pH, and the well bore pressures and temperatures. For drilling and workover operations, such equipment includes the drill string, casing, wellhead, blowout preventers, kill lines, choke manifold, valves and other related equipment. Each Application for Permit to Drill and each Notice of Intention to Workover a well must describe precautions to be taken to protect equipment from H_2S. The following general practices are required for acceptable performance:

(a) Drill string.

Drill strings shall be designed for the anticipated depth, conditions of the hole, and reservoir environment. Care will be taken to minimize exposure of the drill string to high stresses, as practical and consistent with the anticipated hole conditions.

(b) Casing.

Casing, couplings, flanges, and related equipment shall be designed for H_2S service.

(c) Wellhead, blowout preventers, and pressure control equipment:

The blowout preventer stack assembly shall be designed in accordance with the latest state-of-the-art for H_2S service. Surface equipment such as choke lines, choke manifold, kill lines, pressure gauges, bolting, weldments, and other related well-killing equipment shall be designed and fabricated utilizing the most advanced technology for sulfide stress cracking. Elastomers, packing, and similar inner parts exposed to H_2S must be resistant at the maximum anticipated temperature of exposure.

III. Producing Operations

Except for storage tanks, a determination of the radius of exposure for all production systems shall be made in the manner prescribed in Section I. of this Notice.

A. Storage Tanks

Storage tanks utilized as a part of a production operation and operated at or near atmospheric pressure, where the vapor accumulation has an H_2S concentration in excess of 500 ppm, will be subject to the following:

(1) No determination of a radius of exposure shall be made for storage tanks as herein described.

(2) A warning sign shall be posted on or within 50 feet of the facility to alert the general public of the potential danger. The sign shall be painted a high visibility yellow with black lettering, of sufficient size to be readable at a reasonable distance from the facility. The sign shall indicate:

DANGER-POISON GAS - H_2S

(3) Fencing as an additional security measure is required when storage tanks are located with ¼ mile of a townsite or city, or where conditions cause the

storage tanks to be exposed to the public.

(4) All stock tank installations, not currently equipped, shall be converted to closed systems. Such systems will provide methods for gauging, sampling, and determining the temperatures without direct entry into the system, and for containment of vapors by recovery or burning. Alternatives to this requirement will be considered and may be approved by the District Engineer upon written request by the operator; this must include reasons for the variance request and methods for personnel protection.

(5) Stock tank vapors with H_2S concentrations in the 100-500 ppm range are not included in the requirement because of low volume emissions. However, they are hazardous to personnel who must work near the hatch or vent. Therefore, the operator shall provide such personnel with H_2S safety equipment and training, and encourage working in pairs.

B. Other Surface Production Facilities

In the case of fixed surface facilities (other than stock tanks) where the 100 ppm radius of exposure is in excess of 50 feet, warning signs are required. The design and placement of such signs shall conform to paragraph III.A. (2), and be clearly visible on roads which provide direct access to the facility.

Fencing or other security measures are required when such facilities are located within ¼ mile of a townsite, or where conditions cause the facility to be exposed to the public.

C. Personnel Protection

The appropriate personnel safety and protection requirements contained in Section II. A. of this Notice are also applicable to leasehold production operations. A

lightweight, self-contained, escape type breathing apparatus will be suitable for personnel who normally work alone. The nature of production operations makes it more vulnerable than drilling or workover operations, by such factors as: a constant threat of H_2S (rather than only after entry into a H_2S zone), personnel working alone, contractors working unsupervised, and leaks which cause a normally safe area to become hazardous, etc. Therefore, the producing operator's responsibility for personnel safety is increasingly critical as the exposure potential increases. Hence, in addition to providing the required protective breathing and detection equipment, wind direction indicators, etc., the operator will provide all personnel with adequate education as to the hazards of handling H_2S, through regularly scheduled and impromptu safety meetings and bulletin board postings.

D. Public Protection

When conditions as defined in Section I. D. exist, a Contingency Plan must be filed with the District Engineer, USGS. The Plan must include all appropriate requirements listed in Section II. B. (1). One such Plan is required per lease or field as specified by the District Engineer. However, the plan must also include alternate actions for the various sub-systems or geographical locations, as necessary, to cover the larger areal limits.

E. Operating Procedures and Equipment

(1) Producing wells, unless produced by artificial lift, must have two master valves, a packer, and corrosion inhibiting fluid. An automatic closing storm choke or surface controlled subsurface safety valve set below 100 feet must be installed. Alternatives to this requirement will be considered and may be approved by the District Engineer upon written request by the operator; this must include reasons for the variance request and methods for personnel protection. In either case, approval of

the producing string and associated safety equipment must be obtained prior to installation.

(2) Surface systems must have automatic closing devices to prevent uncontrolled flow in the event of equipment failure.

(3) Materials and equipment used in new construction and modification of facilities must be resistant to hydrogen sulfide stress cracking under their operating conditions.

(4) Existing facilities with no equipment failure from sulfide stress cracking will be considered adequate.

(5) In the event of a failure of any element of an existing system as a result of hydrogen sulfide stress cracking, the incident must be reported to the District Engineer, with plans for the inspection, protection, or replacement of similar elements of the system.

(6) Corrosion coupons or other methods to monitor corrosion rates shall be installed in all systems in which the H_2S concentration is 100 ppm or greater. If prohibitive corrosion rates are detected, the facilities must be protected by an inhibitor or other suitable means.

Rotating Head
OPTIONAL

ANNULAR PREVENTER
13-5/8" x 3000#
H_2S Trim

BLIND RAMS
13-5/8" x 5000#
H_2S Trim

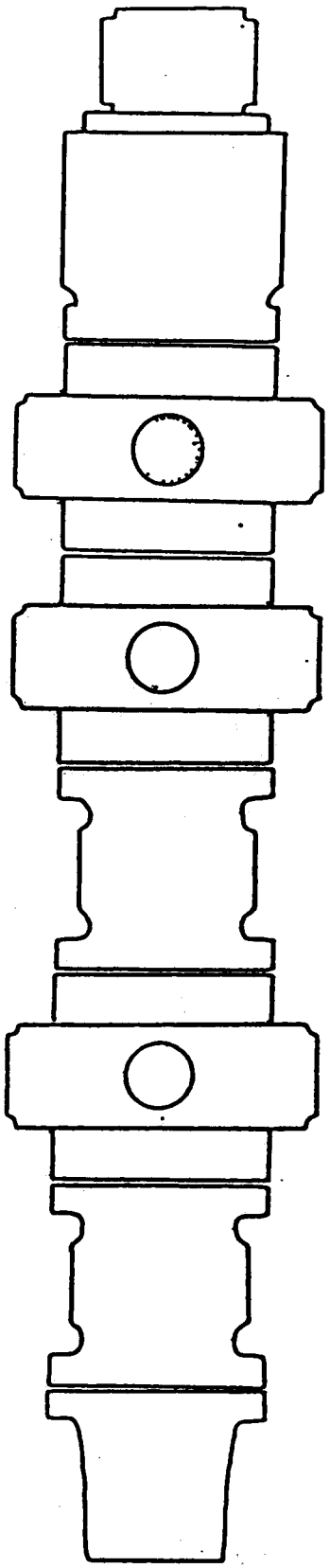
PIPE RAMS
13-5/8" x 5000#
H_2S Trim

DRILLING SPOOL
13-5/8" x 5000#
w/5000# Outlets
H_2S Trim

PIPE RAMS
13-5/8" x 5000#
H_2S Trim

DRILLING SPOOL
(OPTIONAL)

WELLHEAD



TO BE USED ON
13-3/8" to T.D.

CASING SPOOL TO BE USED
IF ANY INTERMEDIATE STRING
OF CASING IS SET.

NOTE: ALL CONNECTIONS FLANGE TYPE,
H_2S TRIM

SOHIO PETROLEUM COMPANY
CHRISTMAS CREEK 26-15
SUMMIT COUNTY, UTAH
ATTACHMENT 2 of 2

CONFIDENTIAL

Form 97 2M 10-70

RECEIVED
JUN 1984
WATER RIGHTS

TEMPORARY

Application No. 21-1534 (T-60055)

APPLICATION TO APPROPRIATE WATER
STATE OF UTAH

NOTE:–The information given in the following blanks should be free from explanatory matter, but when necessary, a complete supplementary statement should be made on the following page under the heading "Explanatory."

For the purpose of acquiring the right to use a portion of the unappropriated water of the State of Utah, for uses indicated by (X) in the proper box or boxes, application is hereby made to the State Engineer, based upon the following showing of facts, submitted in accordance with the requirements of the Laws of Utah.

1. Irrigation ☐ Domestic ☐ Stockwatering ☐ Municipal ☐ Power ☐ Mining ☐ Other Uses ☒
2. The name of the applicant is Sohio Petroleum Company
3. The Post Office address of the applicant is P.O. Box 30, Casper, WY 82602
4. The quantity of water to be appropriated .1 second-feet and/or 20 acre-feet
5. The water is to be used for oil well drilling (Major Purpose) from 8 (Month) 1 (Day) to 12 (Month) 1 (Day)

   other use period – – (Minor Purpose) from (Month) (Day) to (Month) (Day)

   and stored each year (if stored) from N/A (Month) (Day) to (Month) (Day)
6. The drainage area to which the direct source of supply belongs is (Leave Blank)
7. The direct source of supply is* East Fork Bear River (Name of stream or other source)

   which is tributary to , tributary to

*Note.–Where water is to be diverted from a well, a tunnel, or drain, the source should be designated as "Underground Water" in the first space and the remaining spaces should be left blank. If the source is a stream, a spring, a spring area, or a drain, so indicate in the first space, giving its name, if named, and in the remaining spaces, designate the stream channels to which it is tributary, even though the water may sink, evaporate, or be diverted before reaching said channels. If water from a spring flows in a natural surface channel before being diverted, the direct source should be designated as a stream and not a spring.

8. The point of diversion from the source is in Summit County, situated at a point*

   See page 2 - Explanatory

*Note.–The point of diversion must be located definitely by course and distance or by giving the distances north or south, and east or west with reference to a United States land survey corner or United States mineral monument, if within a distance of six miles of either, or if at a greater distance, to some prominent and permanent natural object. No application will be received for filing in which the point of diversion is not defined definitely.

9. The diverting and carrying works will consist of pump (piston or centrifugal) with necessary lines

NA 10. If water is to be stored, give capacity of reservoir in acre-feet height of dam area inundated in acres legal subdivision of area inundated

NA 11. If application is for irrigation purposes, the legal subdivisions of the area irrigated are as follows:

Total Acres

12. Is the land owned by the applicant? Yes No X If "No," explain on page 2.
13. Is this water to be used supplementally with other water rights? Yes No X
    If "yes," identify other water rights on page 2.

NA 14. If application is for power purposes, describe type of plant, size and rated capacity.

NA 15. If application is for mining, the water will be used in Mining District at the mine, where the following ores are mined

NA 16. ~~If application is for stockwatering purposes, number~~ and kind of stock watered

NA 17. If application is for domestic purposes, number of persons , or families

NA 18. If application is for municipal purposes, name of municipality

19. If application is for other uses, include general description of proposed uses used for circulation during drilling operation at the Christmas Creek 26-15 well

20. Give place of use by legal subdivision of the United States Land Survey for all uses described in paragraphs 14 to 19, incl. 2216' FEL, 871' FSL, Section 26, T2N, R10E, Summit County, Utah - Christmas Creek 26-15

21. The use of water as set forth in this application will consume 20 ~~second-feet and/or~~ acre-feet of water and 0 second feet and/ or acre feet will be returned to the natural stream or source at a point described as follows: Water will be contained in a reserve pit. Upon completion water will evaporate or be land applied.

EXPLANATORY

The following additional facts are set forth in order to define more clearly the full purpose of the proposed application:

Application has been made to the Bureau of Land Management and the State of Utah to drill the Christmas Creek 26-15 oil/gas well. Operations are scheduled to commence August 1, 1984 and last for 70 days. During that time, water usage is not expected to exceed 20 acre feet or .1 cfs. Water will be used in drilling and will be stored in the reserve pit on location. Upon completion, water will be evaporated or land applied.

Water will pump from a point along the East Fork Bear River or an unnamed drainage alongside the location, if it's flowing, as our primary water source. In the event cold weather prohibits the continuation of pumping, water will either be hauled from the same point or a water well will be drilled on location.

Possible points of diversion

1) Pumping or hauling from East Fork Bear River.
   1000' FSL, 1700' FWL, Sec. 26, T2N, R10E
2) Pump from unnamed drainage.
   660' FSL, 1900' FEL, Sec. 26, T2N, R10E
3) Water well.
   2400' FEL, 900' FSL, Sec. 26, T2N, R10E

Surface ownership is the U.S. Forest Service, Wasatch Cache National Forest. Any necessary approval/permit will be obtained prior to onset of operations.

(Use page 4 if additional explanatory is needed.)

The quantity of water sought to be appropriated is limited to that which can be beneficially used for the purpose herein described

W. H. Ward W.H. Ward

Signature of Applicant* District Manager

*If applicant is a corporation or other organization, signature must be the name of such corporation or organization by its proper officer, or in the name of the partnership by one of the partners, and the names of the other partners shall be listed. If a corporation or partnership, the affidavit below need not be filled in. If there is more than one applicant, a power of attorney, authorizing one to act for all, should accompany the Application.

DECLARATION OF CITIZENSHIP

STATE OF UTAH,
County of..... } ss

On the .....day of ....., 19....., personally appeared before me, a notary public for the State of Utah, the above applicant who, on oath, declared that he is a citizen of the United States, or has declared his intention to become such a citizen.

My commission expires:

(SEAL)

Notary Public

FEES FOR APPLICATIONS TO APPROPRIATE WATER IN UTAH

Flow rate — c.f.s.	Cost	
0.0 to 0.1	$ 15.00	
over 0.1 to 0.5	30.00	
over 0.5 to 1.0	45.00	
over 1.0 to 15.0	45.00	plus $7.50 for each cfs above the first cubic foot per second.
over 15.0	150.00	

Storage — acre-feet		
0 to 20	22.50	
over 20 to 500	45.00	
over 500 to 7500	45.00	plus $7.50 for each 500 a.f. above the first 500 acre feet.
over 7500	150.00	

(This section is not to be filled in by applicant)

STATE ENGINEER'S ENDORSEMENTS

1. JUN 25 1984 Application received by mail ~~over counter~~ in State Engineer's office by [illegible]
2. ..... Priority of Application brought down to, on account of .....
3. JUN 25 1984 Application fee, $22.50, received by [illegible] Rec. No. 16028 — 6-29-84 J.H
4. ..... Application microfilmed by ..... Roll No. .....
5. 7-2-84 Indexed by [illegible] Platted by .....
6. JUN 25 1984 Application examined by [illegible]
7. ..... Application returned, ... or corrected by office .....
8. ..... Corrected Application resubmitted by mail over counter to State Engineer's office.
9. ~~JUN 25 1984~~ Application approved for advertisement by [illegible]
10. ..... Notice to water users prepared by .....
11. ..... Publication began; was completed .....
    Notice published in .....
12. ..... Proof slips checked by .....
13. ..... Application protested by .....
14. ..... Publisher paid by M.E.V. No. .....
15. ..... Hearing held by .....
16. ..... Field examination by .....
17. 6/25/84 Application designated for approval ~~rejection~~ [illegible] S.E.
18. 8/3/84 Application copied or photostated by slm proofread by .....
19. 8/3/84 Application approved ~~rejected~~
20. **Conditions:**

    This Application is approved, subject to prior rights, as follows:

    a. Actual construction work shall be diligently prosecuted to completion.

    b. Proof of Appropriation shall be submitted to the State Engineer's office by NPR

    c. TEMPORARY APPROVAL -- EXPIRES December 1, 1984.

    Dee C. Hansen, P.E., State Engineer

21. ..... Time for making Proof of Appropriation extended to .....
22. ..... Proof of Appropriation submitted.
23. ..... Certificate of Appropriation, No. ....., issued

Application No. 60055

WATER RIGHTS DATA BASE
ENTERED - DATE 6/26/84 BY [illegible]
VERIFIED - DATE 7/6/84 BY [illegible]

STATE OF UTAH
NATURAL RESOURCES
Water Rights

1636 West North Temple • Salt Lake City, UT 84116 • 801-533-6071

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Dee C. Hansen, State Engineer

AUG

August 3, 1984

Sohio Petroleum Company
P.O. Box 30
Casper, WY 82602

Dear Applicant:

RE: TEMPORARY APPLICATION
NUMBER 21-1524 (T60055)

Enclosed is a copy of the above numbered approved Temporary Application. This is your authority to construct your works and to divert the water for the uses described.

While this approved application does give you our permission to divert and use water, it does not grant easements through public or private lands in order to gain access to the source nor to convey the water to the place of use, nor does this approval eliminate the need for such other permits as may be required by this Division or any other agency in implementing your diversion.

This application will expire December 1, 1984, and it is expected that no diversion or use of the water will be done after that date unless another proposal has been made and approved.

Your contact with this office, should you need it is with the Area Engineer, R. Michael Turnipseed. The telephone number is (801)752-8755.

-- Yours truly,

Dee C. Hansen

Dee C. Hansen, P. E.
State Engineer

DCH:slm

Enclosure

Note
Dec 1
Exp date

DIST		INIT	HNDL
	Dist. Mgr.	W	
	Prod. - Supt.		
✓	[illegible]		
✓	DE - [illegible]	GB	
	DE - Dr[illegible]		
✓	Dist. [illegible]		
	[illegible]		
✓	Pe[illegible]		
✓	monte		
	File		

STATE OF UTAH
NATURAL RESOURCES
Water Rights

1636 West North Temple • Salt Lake City, UT 84116 • 801-533-6071

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Dee C. Hansen, State Engineer

August 3, 1984

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Your contact with this office, should you need it is with the Area Engineer, R. Michael Turnipseed. The telephone number is (801)752-8755.

Yours truly,

Dee C. Hansen, P. E.
State Engineer

TEMPORARY

DCH:slm

Enclosure

SOHIO PETROLEUM COMPANY
EXPLORATION AND PRODUCTION

P. O. BOX 30
CASPER, WYOMING 82602

August 16, 1984
WHW: 87
ID: 0263B

Mr. John Baza
Division of Oil, Gas and Mining
4241 State Office Building
Salt Lake City, UT 84114

RE: Approved Water Permit
Christmas Creek 26-15
Summit County, Utah

Dear Mr. Baza:

As required upon approval of our A. P. D., attached is a copy of the letter from the Division of Water Rights granting a Temporary Application #21-1524 (T60055) to divert water to service the Christmas Creek 26-15.

Please advise if further information is needed.

Sincerly,

W. H. Ward

W. H. Ward
District Manager

TR/llg
Attachment

cc: T. Rooney
File
Read File

W/ok

DIVISION OF OIL, GAS AND MINING CONFIDENTIAL

SPUDDING INFORMATION

API #43-043-30258

NAME OF COMPANY: Sohio

WELL NAME: Christmas Creek #26-15

SECTION SWSE 26 TOWNSHIP 2N RANGE 10E COUNTY Summit

DRILLING CONTRACTOR Loffland

RIG # 60

SPUDDED: DATE 9-2-84

TIME 10:00 PM

HOW Rotary

DRILLING WILL COMMENCE _____

REPORTED BY Terry Rooney

TELEPHONE # 307-237-3861

DATE 9-4-84 SIGNED AS

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING

CONFIDENTIAL

BLOW OUT PREVENTION TEST

NAME OF COMPANY: Sohio Petroleum

WELL NAME: Christmas Creek 26-15

SECTION: 26 TOWNSHIP 2N. RANGE 10E. COUNTY: Summit

DRILLING CONTRACTOR: _____

RIG # _____

BOP TEST: DATE: 10-9-84

TIME: _____

DRILLING: _____

CASING: _____

H_2S: _____

REPORTED BY: Ron Auflick

TELEPHONE NO. 801-642-6621

DATE: 10-9-84 SIGNED V.B.

CONFIDENTIAL

Form OGCC-1 be

STATE OF UTAH

OIL & GAS CONSERVATION COMMISSION

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

RECEIVED
OCT 12 1984
DIVISION OF OIL GAS & MINING

1. OIL WELL [X] GAS WELL [ ] OTHER

2. NAME OF OPERATOR: Sohio Petroleum Company

3. ADDRESS OF OPERATOR: P. O. Box 30, Casper, WY 82602

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements. See also space 17 below.) At surface: 2341' FEL, 1480' FSL

5. LEASE DESIGNATION AND SERIAL NO.: ML-40438

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: NA

7. UNIT AGREEMENT NAME: Christmas Creek II

8. FARM OR LEASE NAME: Christmas Creek

9. WELL NO.: 26-15

10. FIELD AND POOL, OR WILDCAT: Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec 26, T2N, R10E

12. COUNTY OR PARISH: Summit

13. STATE: Utah

14. PERMIT NO.: 43-043-30258

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 8912.5' GR

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	[ ]	PULL OR ALTER CASING	[ ]	WATER SHUT-OFF	[ ]	REPAIRING WELL	[ ]
FRACTURE TREAT	[ ]	MULTIPLE COMPLETE	[ ]	FRACTURE TREATMENT	[ ]	ALTERING CASING	[ ]
SHOOT OR ACIDIZE	[ ]	ABANDON*	[ ]	SHOOTING OR ACIDIZING	[ ]	ABANDONMENT*	[ ]
REPAIR WELL	[ ]	CHANGE PLANS	[ ]	(Other) Sundry Notice			[ ]
(Other)			[ ]	(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

CONFIDENTIAL

MONTHLY SUNDRY

For The Weeks Of September 3, 1984-October 10, 1984

18. I hereby certify that the foregoing is true and correct

SIGNED W. H. Ward (W. H. Ward) TITLE District Manager DATE 10/10/84

(This space for Federal or State office use)

APPROVED BY ____ TITLE ____ DATE ____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

CONFIDENTIAL

Well History
Christmas Creek 26-15
September 3, 1984 - October 10, 1984

9/3/84	Depth 80'	Mix LCM	MW-Wtr
9/4/84	Depth 145'	Mix Gunk	MW 8.5, Vis 38
9/5/84	Depth 145'	Reaming	
9/6/84	Depth 205'	Drlg.	MW 9.3, Vis 47
9/7/84	Depth 255'	Drlg.	MW 9.2, Vis 60
9/8/84	Depth 326'	WOC	MW 9.3, Vis 80
9/9/84	Depth 326'	NU BOP	
9/10/84	Depth 420'	Drlg.	MW 8.6, Vis 35
9/11/84	Depth 711'	Tripping	MW 8.7, Vis 35
9/12/84	Depth 1185'	Drlg.	MW 8.8, Vis 35
9/13/84	Depth 1687'	Drlg.	MW 8.9, Vis 35
9/14/84	Depth 2051'	Drlg.	MW 8.9, Vis 36
9/15/84	Depth 2327'	Drlg.	MW 8.9, Vis 36
9/16/84	Depth 2601'	Drlg.	MW 8.9, Vis 36
9/17/84	Depth 2786'	GIH	MW 8.8, Vis 36
9/18/84	Depth 3052'	Drlg.	MW 8.9, Vis 35
9/19/84	Depth 3152'	PU Fish	MW 8.8, Vis 35
9/20/84	Depth 3152'	Fishing	MW 8.8, Vis 35
9/21/84	Depth 3152'	Fishing	MW 8.8, Vis 39
9/22/84	Depth 3252'	Drlg.	MW 8.7, Vis 36
9/23/84	Depth 3445'	Surveying	MW 8.8, Vis 37
9/24/84	Depth 3669'	Drlg.	MW 8.9, Vis 35
9/25/84	Depth 4032'	Drlg.	MW 8.9, Vis 36
9/26/84	Depth 4318'	Drlg.	MW 8.9, Vis 34
9/27/84	Depth 4535'	POH	MW 8.9, Vis 35
9/28/84	Depth 4641'	Drlg.	MW 8.9, Vis 36
9/29/84	Depth 4891'	Drlg.	MW 8.9, Vis 38
9/30/84	Depth 5130'	CF Log	MW 8.9, Vis 42
10/1/84	Depth 5153'	Circ	MW 8.9, Vis 42
10/2/84	Depth 5153'	PU	MW 8.9, Vis 45
10/3/84	Depth 5206'	Coring	MW 8.8, Vis 5.9
10/4/84	Depth 5213'	Reaming	MW 8.8, Vis 46
10/5/84	Depth 5392'	Drlg.	MW 9, Vis 55
10/6/84	Depth 5438'	Drlg.	MW 9.1, Vis 49
10/7/84	Depth 5668'	Drlg.	MW 9, Vis 42
10/8/84	Depth 5762'	Drlg.	MW 9, Vis 44
10/9/84	Depth 5870'	Drlg.	MW 9.1, Vis 46
10/10/84	Depth 5930'	Drlg.	MW 9.1, Vis 41

CONFIDENTIAL

Form DOGC-4

RECEIVED
OCT 17
DIVISION OF OIL GAS & MINING

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL & GAS CONSERVATION
4241 STATE OFFICE BUILDING
SALT LAKE CITY, UTAH 84114
533-5771

State Lease No. U-27663
Federal Lease No. NA
Indian Lease No. NA
Fee & Pat. NA

REPORT OF OPERATIONS AND WELL STATUS REPORT

STATE Utah COUNTY Summit FIELD/LEASE Christmas Creek 26-15

The following is a correct report of operations and production (including drilling and producing wells) for the month of September, 19 84.

Agent's Address P.O. Box 30
Casper, WY 82602
Phone No. 307-237-3861

Company Sohio Petroleum Company
Signed [signature]
Title District Administrator

Sec. and ¼ of ¼	Twp.	Range	Well No.	Days Produced	Barrels of Oil	Gravity	Cu. Ft. of Gas (in thousands)	Gallons of Gasoline Recovered	Barrels of Water (if none, so state)	API NUMBER/REMARKS (If drilling, depth; if shut down, cause, date and result of test for gasoline content of gas)
NW SW SE Sect. 26	2N	10E	1	Drilling						API #43-043-30258 TD: 5153' Spud 10 PM, 9/2/84

CONFIDENTIAL

GAS: (MCF)
Sold 0
Flared/Vented 0
Used On/Off Lease 0

OIL or CONDENSATE: (To be reported in Barrels)
On hand at beginning of month 0
Produced during month 0
Sold during month 0
Unavoidably lost 0
Reason: 0
On hand at end of month 0

DRILLING/PRODUCING WELLS: This report must be filed on or before the sixteenth day of the succeeding month following production for each well. Where a well is temporarily shut-in, a negative report must be filed. ***THIS REPORT MUST BE FILED IN DUPLICATE.***

Note: The API number must be listed on each well.

HYDROSTATIC PRESSURE TEST - B.O.P.'s

SOHIO - CHRISTMAS CREEK #26-15

LOFFLAND RIG #60

OCTOBER 8, 1984

by

YELLOW JACKET TOOLS AND SERVICE, INC.

EVANSTON, WYOMING

TESTED BY: WES HOLMGREN

TICKET NO. 61403

YellowJacket **TOOLS - SERVICE** *"SPECIALIST"*

BILLING INQUIRIES – 915 – 366-9494

8705 West County Rd. – Odessa, Texas 79764

DELIVERY TICKET NO. 61403

INVOICE NO. 10-156-F (utah)

DATE 10-16-04

CHARGE TO: ☒ OPERATOR SOHIO DIST. OFFICE Casper, Wyo.

☐ CONTRACTOR Loffland RIG# 60

COMPANY MAN Ron Auflick TOOL PUSHER Dave Hostetter

WELL DRILLING IN WHAT AREA: S. of Evanston Wyo. LEASE Christmas Creek # 26-15

SECTION TOWNSHIP RANGE COUNTY STATE

EQUIPMENT TESTED AND OKAYED AT END OF TEST:

Pipe	RAMS TO 300-5000 #	CASING TO NTD #		KILL-LINE CHECK 300-5000 #		FLOOR SAFETY VAL 300-5000	
Pipe	RAMS TO 300-5000 #	ANNULAR 300-2500 #		CHOKE MANIFOLD 300-5000 #		Floor safety valve failed, to be replaced	
Blind	RAMS TO 300-5000 #	CHOKELINE 300-5000 #		UPPER KELLY VAL 300-5000 #			
	RAMS TO 300-5000 #	KILL-LINE 300-5000 #		LOWER KELLY VAL 300-5000 #		*NTD–NO TEST DESIRED	

EQUIPMENT NOT TESTED:

1. LEAKS OR FAILURES AT CONCLUSION OR NOT TESTED Casing NTD. Floor safety valve failed, to be replaced.
2. DELAYS OR DIFFICULT OPERATION AT CONCLUSION none
3. NOT IN RIG INVENTORY AT CONCLUSION

CLOSING SYSTEM: 6 SEC

INITIAL PRESSURE 1500 FINAL PRESSURE 900 CLOSING TIME MIN.

OF ACCUMULATOR BOTTLES, IF 0 WRITE NONE (15) FINAL PRESSURE (1500)

CONTROL VALVE HANDLES BACKWARDS AT CONCLUSION NO

EXTENSIONS WERE HOOKED UP AT CONCLUSION ☐ YES ☒ NO

ARRIVED ON LOCATION 12:00 AM PM 10-8 DATE RIG DOING WHAT Pulling out of hole

BEGAN TEST 12:45 AM PM 10-8 DATE ENDED TEST [illegible] AM PM 10-8 DATE

HOURS TESTING 8 HOURS WAITING ON RIG 3/4 hour

TRANSPORTATION - ROUND TRIP MILES @ $ PER MILE minimum		$ 50.00
HOT SHOT NEEDED IN JOB: ☒ NO ☐ YES TRAVEL TIME HOURS @		$
YELLOW JACKET SET UP CHARGE OR MINIMUM DRY RUN Not to [illegible]		$ [illegible]
HOURLY RATE - TOTAL TIME ON LOCATION 7 HRS. @ [illegible]		$ [illegible]
TEST SUBS # 4½ IF CONN. # @ $		$
WELL HEAD TEST/PLUG SIZE 12" MANUFACTURER NeVoy TYPE PSI RATING @ 5000		$
CASING/ PACKER SIZE 13 3/8 GRADE H-40 WEIGHT INT. YIELD 1730 X .8 = 1384		$
CHEMICAL TYPE Methanol ☑ GAL. ☐ BBL @ 2.50		$ 75.00
OTHER:		$
		$
P.O.# TERMS ON REVERSE SIDE OF THIS INVOICE		$

OWNER OR OWNER'S REPRESENTATIVE

WES HOLMGREN

DELIVERED BY: (TESTER)

SUB TOTAL

____% TAX

TOTAL $ 1,050.00

PLEASE REMIT TO:

YELLOW JACKET TOOLS - SERVICES, INC.
8705 WEST COUNTY ROAD
ODESSA, TEXAS 79764
TAX ID #75-1362562

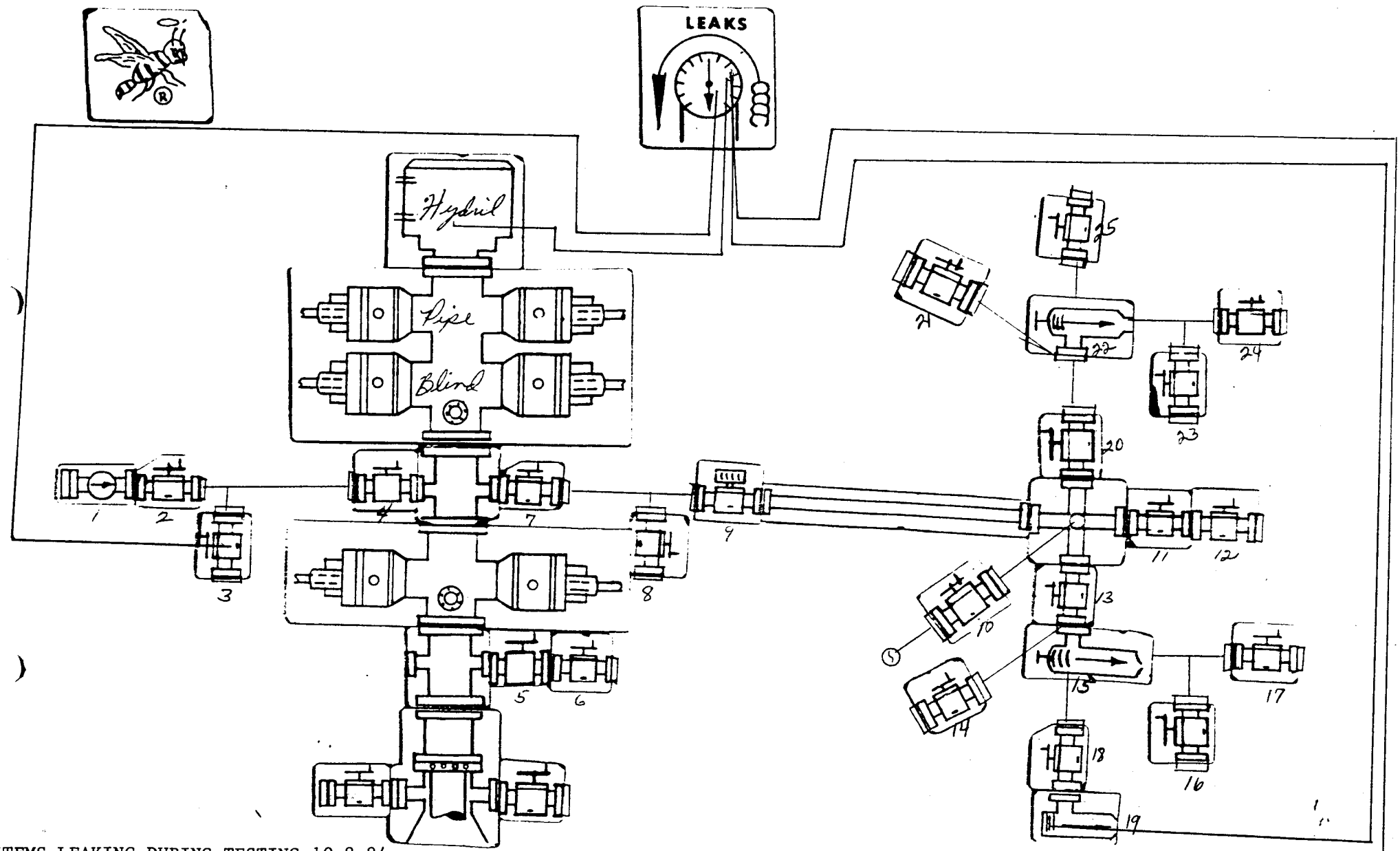
COMPANY SOHIO **Well** CHRISTMAS CREEK 26-15 **Date** 10-8-84

Test #	Items Tested	Pressure Pt.	Pressure	Minutes Held	Results
1	Lower pipe rams with valve 5	Down drill pipe	300#	5 min	No visible leak
2	Lower Pipe rams	"	5000#	15 min	No visible leak
3	Upper Pipe rams with valves 4, 7	"	300#	5 min	No visible leak
4	"	"	5000#	15 min	No visible leak
5	Valves #2,3,8,9,6 with upper pipe rams	"			No pressure build-No visible leak Check valves-work HCR (#9)
6	"	"	300#	5 min	No visible leak
7	"	"	5000#	15 min	100# loss-valve #3
8	"	"	5000#	15 min	No visible leak
9	Valves 1,10,11,13,20 w/upper pipe rams chokeline, kill-line	"	300#	5 min	No visible leak
10	"	"	5000#	15 min	No visible leak
11	Hydril with valves #3,10,11,13,20	"			Leak past hydril-work hydril
12	"	"			Same leak-work hydril
13	"	"			Same leak-work hydril
14	"	"	300#	5 min	Repressure once-no visible leak
15	"	"	2500#	15 min	Repressure once-no visible leak, 100# loss
16	Blind rams w/valves 4,12,14,18,21,25	Gauge connection	300#	5 min	No visible leak
17	"	"	5000#	15 min	Repressure one, no visible leak
18	Backside valve #9 with valves #16, 17, 19,23,24,25,12	"			Leak at valve #19
	see page 2				

COMPANY SOHIO **Well** CHRISTMAS CREEK 26-15 **Date** 10-8-84

Test #	Items Tested	Pressure Pt.	Pressure	Minutes Held	Results
19	Backside valve #9 with valves 16,17,19, 23,24,25,12	Gauge connection	300#	5 min	No visible leak
20	"	"	5000#	15 min	Repressure twice-300# loss past valve #19-okay per Ron Auflick
21	Lower Kelly valve	Kelly tester	300#	5 min	No visible leak
22	"	"	5000#	15 min	Repressure once No visible leak
23	Upper Kelly valve	"	300#	5 min	No visible leak
24	"	"	5000#	15 min	Repressure twice No visible leak, 100# loss
25	TIW valve	"	300#	5 min	No visible leak
26	"	"	5000#	15 min	No visible leak
27	Dart valve	"			Leak past valve
28	"	"			Same leak
29	"	"			Same leak
					Dart valve to be replaced as soon as possible. Ron Auflick

BLOWOUT CONTROL EQUIPMENT.....SOHIO.....CHRISTMAS CREEK #26-15



ITEMS LEAKING DURING TESTING 10-8-84

ITEMS LEAKING

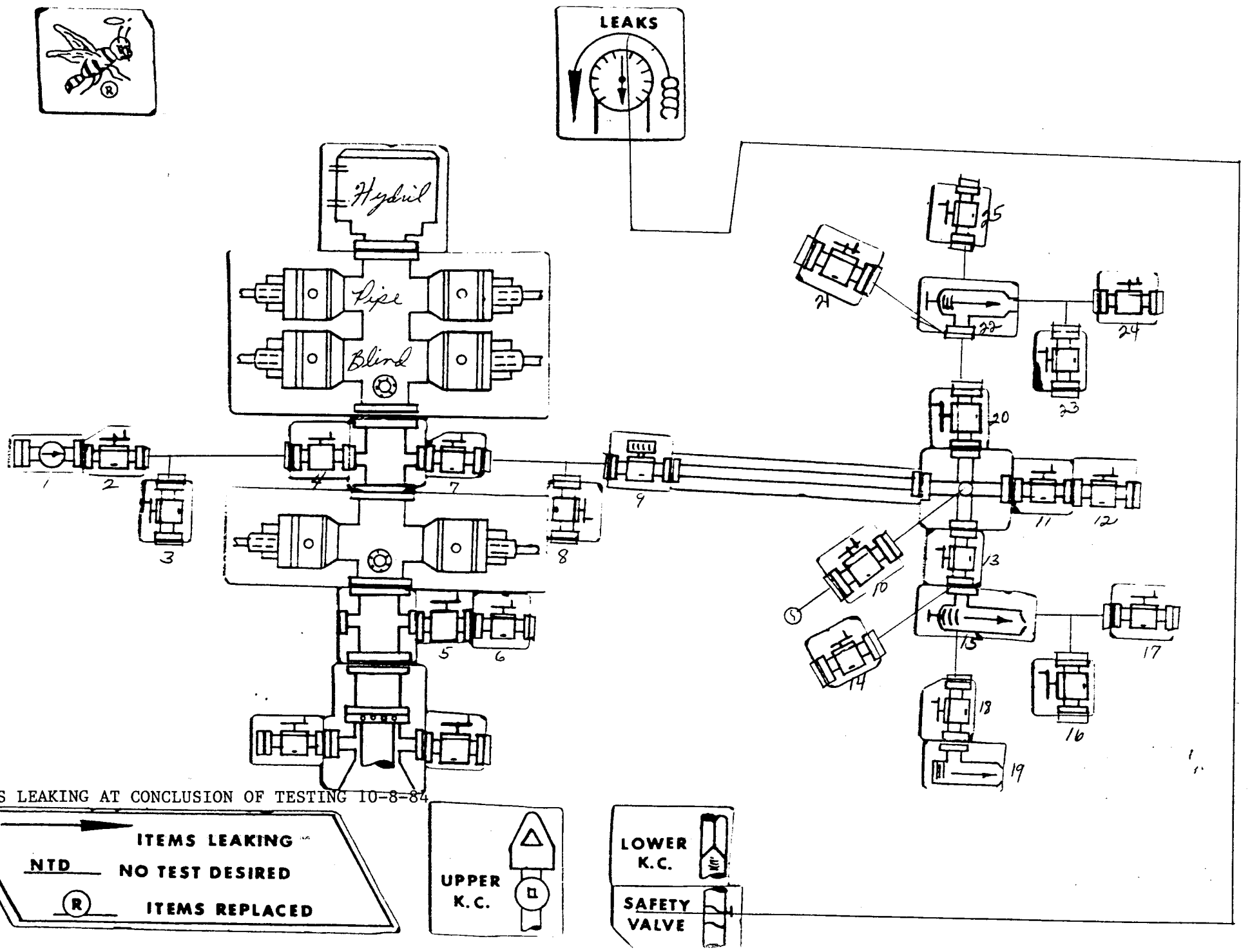
NTD NO TEST DESIRED

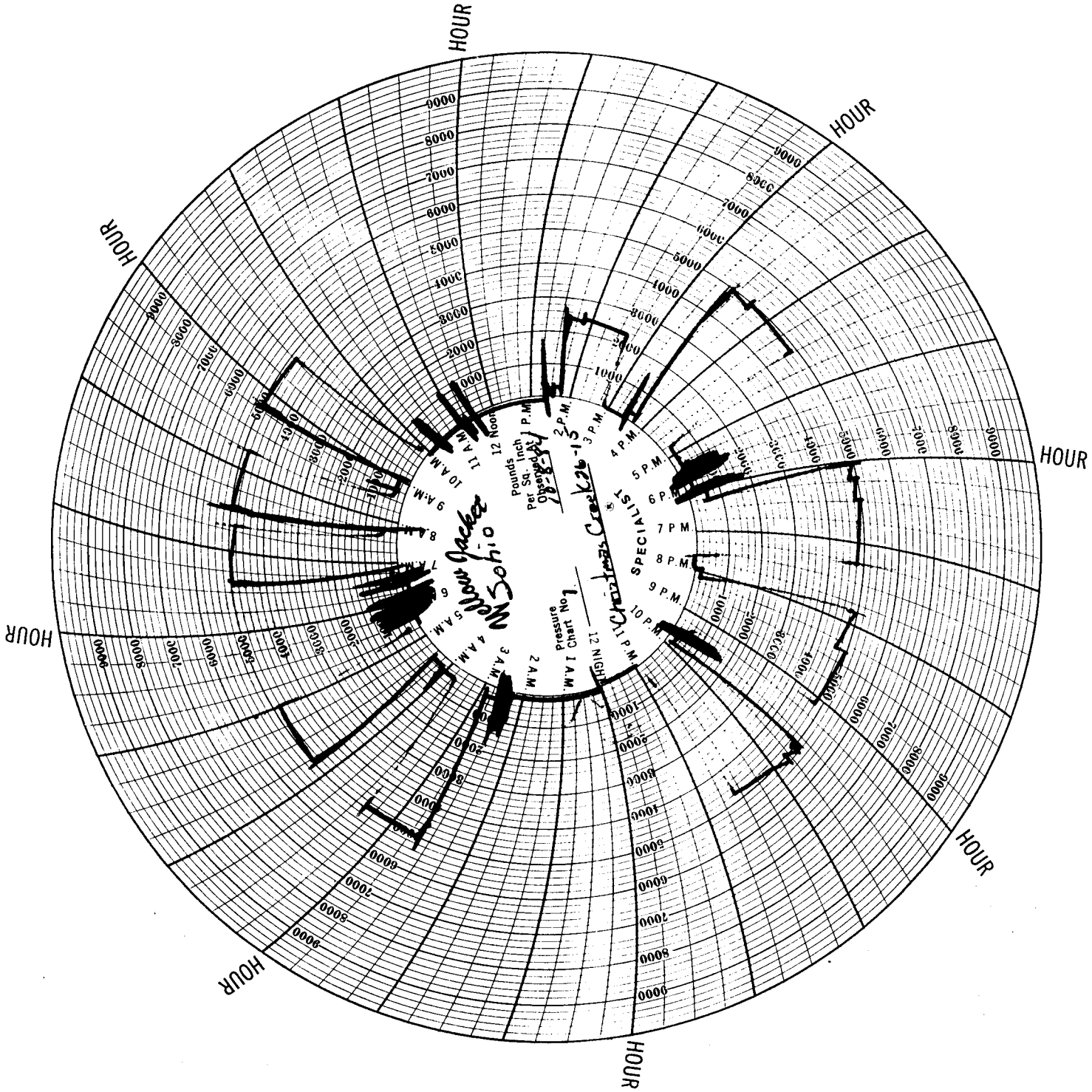
(R) ITEMS REPLACED

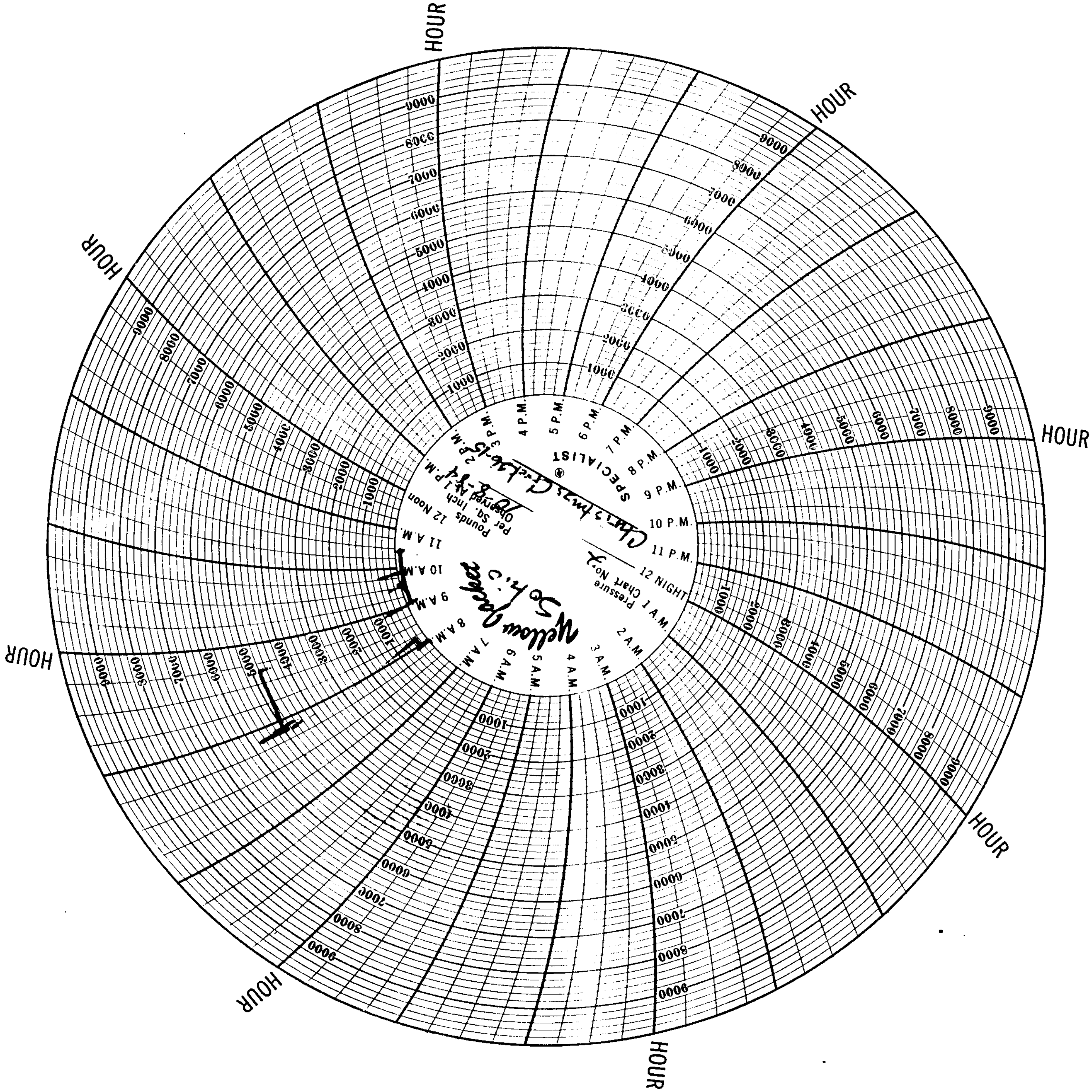
UPPER K.C.

LOWER K.C.

SAFETY VALVE


LEAKS
Hydril
Pipe
Blind
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
ITEMS LEAKING AT CONCLUSION OF TESTING 10-8-84
ITEMS LEAKING
NTD NO TEST DESIRED
R ITEMS REPLACED
UPPER K.C.
LOWER K.C.
SAFETY VALVE


HOUR
HOUR
HOUR
HOUR
HOUR
HOUR
Pounds Sq. Inch Per Observed At
Pressure Chart No. 1
SPECIALIST
12 Noon
1 P.M.
2 P.M.
3 P.M.
4 P.M.
5 P.M.
6 P.M.
7 P.M.
8 P.M.
9 P.M.
10 P.M.
11 P.M.
12 NIGHT
1 A.M.
2 A.M.
3 A.M.
4 A.M.
5 A.M.
6
7 A.M.
8 A.M.
9 A.M.
10 A.M.
11 A.M.


SPECIALIST
Pressure Chart No.
Pounds Per Sq. Inch
Observed At
12 Noon
HOUR

Form DOGC-4

STATE OF UTAH

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL & GAS CONSERVATION
4241 STATE OFFICE BUILDING
SALT LAKE CITY, UTAH 84114
533-5771

State Lease No. U-27663
Federal Lease No. NA
Indian Lease No. NA
Fee & Pat. NA

REPORT OF OPERATIONS AND WELL STATUS REPORT

STATE Utah COUNTY Summit FIELD/LEASE Christmas Creek 26-15

The following is a correct report of operations and production (including drilling and producing wells) for the month of: October, 19 84

Agent's Address P.O. Box 30
Casper, WY 82602
Phone No. 307-237-3861

Company Sohio Petroleum Company
Signed [signature]
Title District Administrator

Sec. and ¼ of ¼	Twp.	Range	Well No.	Days Produced	Barrels of Oil	Gravity	Cu. Ft. of Gas (In thousands)	Gallons of Gasoline Recovered	Barrels of Water (if none, so state)	API NUMBER/REMARKS (If drilling, depth; if shut down, cause; date and result of test for gasoline content of gas)
SW SE Sect. 26	2N	10E	1	Drilling						API #43-043-30258 TD: 7632'

CONFIDENTIAL

GAS: (MCF)
Sold 0
Flared/Vented 0
Used On/Off Lease 0

OIL or CONDENSATE: (To be reported in Barrels)
On hand at beginning of month 0
Produced during month 0
Sold during month 0
Unavoidably lost 0
Reason: 0
On hand at end of month 0

DRILLING/PRODUCING WELLS: This report must be filed on or before the sixteenth day of the succeeding month following production for each well. Where a well is temporarily shut-in, a negative report must be filed. *THIS REPORT MUST BE FILED IN DUPLICATE.*

Note: The API number must be listed on each well.

CONFIDENTIAL

Form OGCC-1 b

STATE OF UTAH

OIL & GAS CONSERVATION COMMISSION

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

5. LEASE DESIGNATION AND SERIAL NO.: ML-40438

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: NA

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL [X] GAS WELL [ ] OTHER

7. UNIT AGREEMENT NAME: Christmas Creek II

2. NAME OF OPERATOR: Sohio Petroleum Company

8. FARM OR LEASE NAME: Christmas Creek

3. ADDRESS OF OPERATOR: P. O. Box 30, Casper, WY 82602

9. WELL NO.: 26-15

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 2341' FEL, 1480' FSL

10. FIELD AND POOL, OR WILDCAT: Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec 26, T2N, R10E

14. PERMIT NO.: 43-043-30258

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 8912.5' GR

12. COUNTY OR PARISH: Summit

13. STATE: Utah

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	[ ]	FULL OR ALTER CASING	[ ]	WATER SHUT-OFF	[ ]	REPAIRING WELL	[ ]
FRACTURE TREAT	[ ]	MULTIPLE COMPLETE	[ ]	FRACTURE TREATMENT	[ ]	ALTERING CASING	[ ]
SHOOT OR ACIDIZE	[ ]	ABANDON*	[ ]	SHOOTING OR ACIDIZING	[ ]	ABANDONMENT*	[ ]
REPAIR WELL	[ ]	CHANGE PLANS	[ ]	(Other) Sundry Notice			[ ]
(Other)			[ ]	(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

MONTHLY SUNDRY

For The Weeks Of October 11, -November 2, 198

CONFIDENTIAL

18. I hereby certify that the foregoing is true and correct

SIGNED W. H. Ward W. H. Ward TITLE District Manager DATE 11-6-84

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

CONFIDENTIAL

Well History
Christmas Creek 26-15
October 11, 1984 - November 2, 1984

10/11/84	Depth 5950'	Drlg.	MW 9.1, Vis. 40
10/12/84	Depth 5978'	Drlg.	MW 9, Vis 42
10/13/84	Depth 5991'	Drlg.	MW 9, Vis 39
10/14/84	Depth 5991'	PU CB	MW 9, Vis 39
10/15/84	Depth 6015'	Drlg.	MW 9, Vis 39
10/16/84	Depth 6020'	Open Hole	MW 9.3, Vis 38
10/17/84	Depth 6211'	Drlg.	MW 9, Vis 38
10/18/84	Depth 6389'	Drlg.	MW 9, Vis 41
10/19/84	Depth 6519'	Drlg.	MW 9, Vis 41
10/20/84	Depth 6671'	Drlg.	MW 9.1, Vis 39
10/21/84	Depth 6840'	Drlg.	MW 9.0, Vis 39
10/22/84	Depth 6888'	Drlg.	MW 9.1, Vis 39
10/23/84	Depth 7001'	Drlg.	MW 9.0, Vis 41
10/24/84	Depth 7129'	Drlg.	MW 9.0, Vis 42
10/25/84	Depth 7178'	Drlg.	MW 9.0, Vis 40
10/26/84	Depth 7196'	Drlg.	MW 9, Vis 40
10/27/84	Depth 7238'	Drlg.	MW 9, Vis 48
10/28/84	Depth 7383'	Drlg.	MW 9, Vis 39
10/29/84	Depth 7383'	TIH	MW 9, Vis 44
10/30/84	Depth 7389'	Drlg.	MW 9, Vis 44
10/31/84	Depth 7544'	Drlg.	MW 8.9, Vis 43
11/1/84	Depth 7668'	Drlg.	MW 8.9, Vis 40
11/2/84	Depth 7781'	Drlg.	MW 9.0, Vis 40

CONFIDENTIAL

11/6/84

Rod Schmidt ✓

Amoco ✓ Christmas Creek #26-15 ✓

TD. 7954'

*✓ Appl.

Nugget 3976'
✓Ankareh 4194'
✓Thaynes 4830' ✓
✓Dinwoody 6760'
Phosphoria 7173'
Weber 7740'
TD — 7954

13 3/8" @ 322' cmtd to surface
12 1/4" hole

> Alluvium

DST phosphoria
sli. Gas show, Rec. water

(1) 100' @ Phosphoria
(2) 100' @ Thaynes
(3) 100' @ Nugget
(4) 50' and 50' out CSG.
(5) 10 sks. w/ marker

3250' - 3750'
↓ Future kickoff plug

✓W.O.D. following logging ✓

CONFIDENTIAL

Form OGCC-1 be

STATE OF UTAH

OIL & GAS CONSERVATION COMMISSION

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL [X] GAS WELL [ ] OTHER

2. NAME OF OPERATOR: Sohio Petroleum Company

3. ADDRESS OF OPERATOR: P. O. Box 30, Casper, WY 82602

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 2341' FEL, 1480' FSL

5. LEASE DESIGNATION AND SERIAL NO.: ML-40438

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: NA

7. UNIT AGREEMENT NAME: Christmas Creek II

8. FARM OR LEASE NAME: Christmas Creek

9. WELL NO.: 26-15

10. FIELD AND POOL, OR WILDCAT: Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec 26, T2N, R10E

14. PERMIT NO.: 43-043-30258

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 8912.5' GR

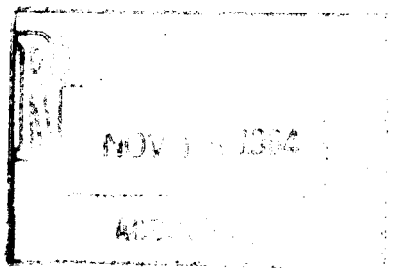
12. COUNTY OR PARISH: Summit

13. STATE: Utah

16. **Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data**

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	[ ]	PULL OR ALTER CASING	[ ]	WATER SHUT-OFF	[ ]	REPAIRING WELL	[ ]
FRACTURE TREAT	[ ]	MULTIPLE COMPLETE	[ ]	FRACTURE TREATMENT	[ ]	ALTERING CASING	[ ]
SHOOT OR ACIDIZE	[ ]	ABANDON*	[ ]	SHOOTING OR ACIDIZING	[ ]	ABANDONMENT*	[ ]
REPAIR WELL	[ ]	CHANGE PLANS	[ ]	(Other) Sundry Notice			
(Other)			[ ]	(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *



CONFIDENTIAL

MONTHLY SUNDRY

For The Weeks Of November 3 - 11, 1984

FINAL REPORT

18. I hereby certify that the foregoing is true and correct

SIGNED W. H. Ward W. H. Ward TITLE District Manager DATE

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

CONFIDENTIAL

Well History
Christmas Creek 26-15
November 3, 1984 - November 11, 1984

11/03/84	Depth 7844'	Drlg	MW 8.9, Vis 40
11/04/84	Depth 7903'	Drlg	MW 8.9, Vis 40
11/05/84	Depth 7954'	Log.	MW 8.9, Vis 39
11/06/84	Depth 7954'	WOO	Running Logs
11/07/84	TD 7954'	Plug.	MW 8.9, Vis 39
11/08/84	Plugging , clean mud pits, drain up.		
11/09/84	Release Rig at 4PM 11-8/84		
11/10/84	Moving out Rental Equipment.		
11/11/84	Finish Moving out rental Equipment. Installed Gate.		

FINAL REPORT

CONFIDENTIAL

SOHIO PETROLEUM COMPANY

OFFICE CORRESPONDENCE

DATE: November 16, 1984
WHW # 91-0485S

TO: File

Re: Fluid Analysis
Christmas Creek 26-15
NWSE 26-2N-10E
Summit County, Utah

Attached is the water analysis of the Phosphoria water recovered from DST No.1. This sample is representative of formation water and not mud filtrate. Sulfate, sodium and TDS concentrations are much higher in this well than those observed in the Christmas Creek 35-B Phosphoria water.

Monte Townsend
Senior Production Engineer I

Approved by:

W. H. Ward
District Manager

MAT:pms

cc: Walters
Hartman
Poppe
Ward
Hoffer
Townsend
Partners
File
Read File

FLOPETROL JOHNSTON
Schlumberger

DISTRIBUTION FOR TECHNICAL REPORTS 26(14X)

COMPANY	WELL	NO.
SOHIO	CHRISTMAS CREEK	26-15
CUSTOMER	FIELD	
SOHIO	CHRISTMAS CREEK	
COUNTY	STATE	
SUMMIT	UTAH	

☐ THIS TEST ONLY ☒ ALL TESTS ON THIS WELL

FJS HAS BEEN REQUESTED TO FURNISH THE FOLLOWING COMPANIES WITH TECHNICAL REPORTS AS SHOWN AT LEFT.

SOHIO PETROLEUM COMPANY
1801 CALIFORNIA STREET
SUITE 3500
DENVER, CO 80202

2

CHAMPLIN PETROLEUM
P.O. BOX 1257
ENGLEWOOD, CO 80150

2

SOHIO PETROLEUM COMPANY
P.O. BOX 30
CASPER, WY 82602

2

MARATHON OIL COMPANY
P.O. BOX 2659
CASPER, WY 82602

1

AMOCO PRODUCTION COMPANY
1670 BROADWAY
DENVER, CO 80202

ATTN: CLIFF BRUCE

2

MOBIL OIL COMPANY
P.O. BOX 5444
DENVER, CO 80217

2

DAVIS OIL COMPANY
410 17TH STREET
SUITE 1400
DENVER, CO 80202

3

CONQUEST EXPLORATION CO.
600 17TH STREET
SUITE 500 NORTH
DENVER, CO 80202

2

FLOPETROL JOHNSTON
Schlumberger

DISTRIBUTION FOR TECHNICAL REPORTS

COMPANY	WELL	NO.
CUSTOMER	FIELD	
COUNTY	STATE	

☐ THIS TEST ONLY ☐ ALL TESTS ON THIS WELL

FJS HAS BEEN REQUESTED TO FURNISH THE FOLLOWING COMPANIES WITH TECHNICAL REPORTS AS SHOWN AT LEFT.

CONQUEST EXPLORATION CO.
P.O. BOX 4512
HOUSTON, TX 77210

2

GETTY OIL COMPANY
THREE PARK CENTRAL
SUITE 700
1515 ARAPAHOE STREET
DENVER, CO 80202

1

AMERICAN QUASAR
1700 BROADWAY
SUITE 707
DENVER, CO 80202

2

AMINOIL, INC.
8000 EAST MAPLEWOOD, #333
ENGLEWOOD, CO 80111

1

EL PASO EXPLORATION
P.O. BOX 4289
FARMINGTON, NM 87499

1

STATE OF UTAH
NAT. RESOURCE & ENERGY
OIL, GAS AND MINING
4241 STATE OFFICE BLDG.
SALT LAKE CITY, UT 84114

2

EL PASO EXPLORATION
P.O. BOX 1492
EL PASO, TX 79978

1

FLOPETROL JOHNSTON
Schlumberger

WELL PERFORMANCE TEST REPORT

A Production Systems Analysis (NODAL)
Based On
Drillstem Test Data

Test Date: 10/29/84

Report No.: 43234 E

COMPANY SOHIO

WELL CHRISTMAS CREEK 26-15

TEST IDENTIFICATION

Test Type	MFE-OH TELEFLOW
Test Number	1
Formation	PHOSPHORIA
Test Interval	7302-7383 FT.
Reference Depth	K.B.

WELL LOCATION

Field	CHRISTMAS CREEK
County	SUMMIT
State	UTAH
Sec / Twn / Rng	SEC. 25-T2N-R108W
Elevation	NOT GIVEN

HOLE CONDITIONS

Total Depth (MVD/TVD)	7383 FT.
Hole Size / Deviation Angle	12 1/4 IN.
Csg / Liner ID	-
Perf'd Interval	-
Shot Density / Phasing	-
Gun Type / Perf Cond	-

MUD PROPERTIES

Mud Type	DISPERSED
Mud Weight	9.0 LB./GAL.
Mud Resistivity	.53 OHM -M @ 68°F
Filtrate Resistivity	1.4 OHM -M @ 80°F
Filtrate Chlorides	1200 PPM
Filtrate Nitrates	-

INITIAL TEST CONDITIONS

Gas Cushion Type	NONE
Surface Pressure	-
Liquid Cushion Type	NONE
Height Above DST Valve	-

TEST STRING CONFIGURATION 6620'/3.826"

Pipe Length / ID	273'/3.00" (HWP)
Collar Length / ID	98'/2.25";244'/2.83"
Packer Depth(s)	7296 & 7302 FT.
BH Choke Size	15/16"

NET PIPE RECOVERY

Volume	Fluid Type	Physical Properties
14.7 BBLS	WATER	10 OHM -M @ 74°F
		200 PPM CHL

NET SAMPLE CHAMBER RECOVERY

Volume	Fluid Type	Physical Properties
.42 FT.^{3}	GAS	CORRECTED TO PWF
2230 CC	WATER	10 OHM -M @ 74°F
		200 PPM CHL

Pressure: 10 PSIG | GOR: - | GLR: 30

INTERPRETATION RESULTS

Reservoir Pressure @Gauge Depth:	2633 PSIA (FSI)
Gauge Depth	7310 FT.
Hydrostatic Gradient	.360 PSI/FT.
Potentiometric Surface	N/A
Effective Permeability to WATER:	1.63 MD.
Transmissibility	44.43 MD. FT./CPS
Skin Factor / Damage Ratio	-2.33/.55
Omega / Lambda (2ϕ System)	-
Radius of Investigation	128 FT.
Measured Wellbore Storage	-

ROCK / FLUID / WELLBORE PROPERTIES

Reservoir Temperature	120°F
Analysis Fluid Type	WATER
Formation Volume Factor	1.01 BBL/BBL
Viscosity	.55 CPS
Z-Factor (gas only)	-
Net Pay	15 FT.
Porosity	10% EST.
Total System Compressibility	3.0 X 10^{-6} 1/PSI
Wellbore Radius	.510 FT.
Expected Wellbore Storage	-

FLOW RATE DURING DST

220.5 BWPD AVG. RATE

MAXIMUM FLOW RATE POTENTIAL AFTER COMPLETION

NO NODAL SYSTEMS ANALYSIS WAS RUN DUE TO THE NATURE OF FLUIDS PRODUCED

This rate is based on a specific completion design & producing time. Call FJS for details.

FJS-5 B14059

JOHNSTON-MACCO
Schlumberger

DST EVENT SUMMARY

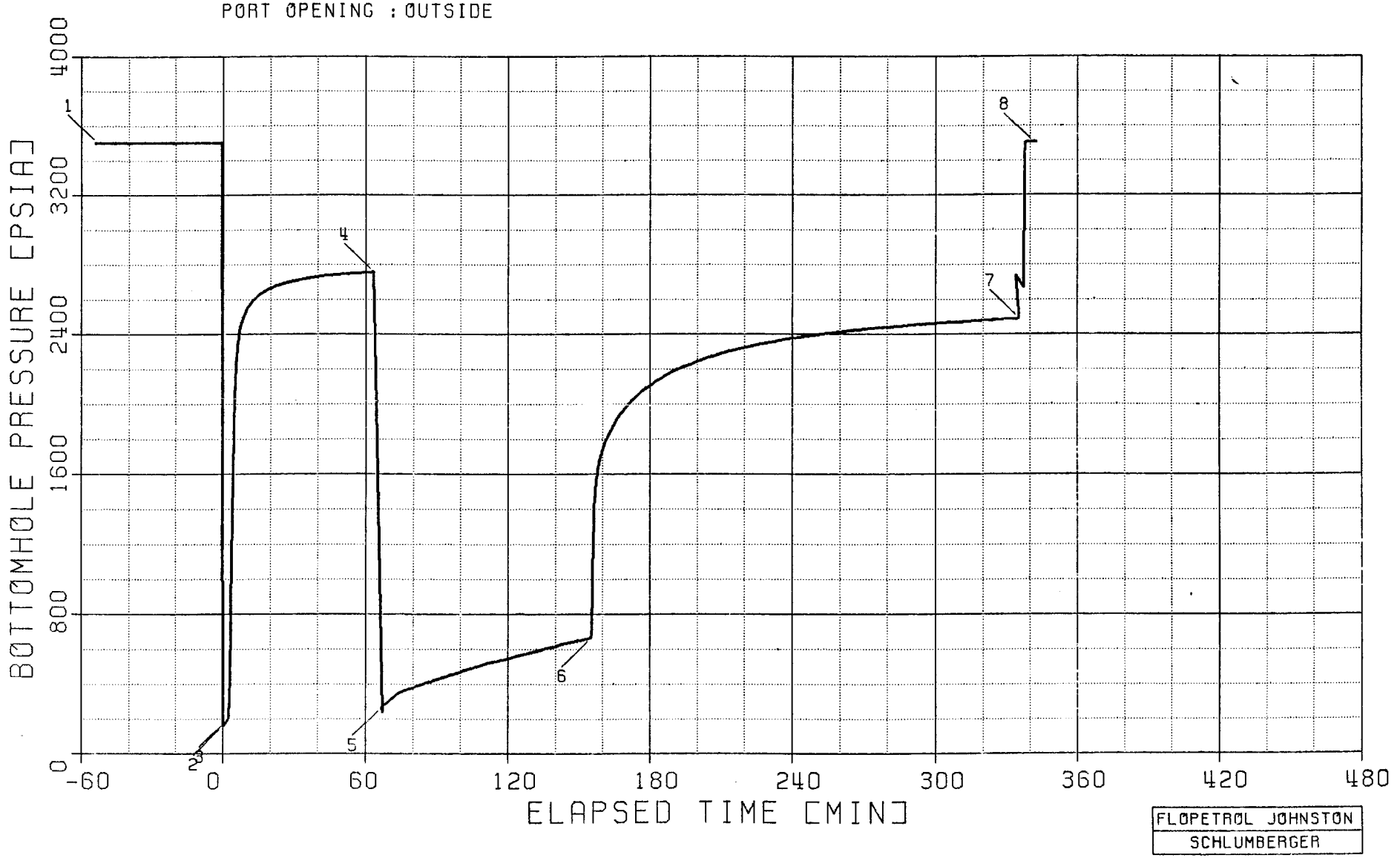
Field Report # 43234 E

DATE (M/D/Y)	TIME (HR:MIN)	EVENT E.T. (MIN)	EVENT DESCRIPTION	SURFACE PRESSURE (PSIG)	FLOOR MANIFOLD CHOKE SIZE (64ths INCH)
10/29/84	06:48	—	SET PACKER		
	06:50	—	OPENED TEST TOOL FOR INITIAL FLOW	0.0	T
	06:52			0.05	E
					L
					E
					F
	06:55	—	CLOSED TEST TOOL FOR INITIAL SHUT-IN	0.10	L
	07:15			0.10	O
					W
					C
	07:58	—	OPENED TEST TOOL FOR FINAL FLOW	0.10	L
	08:00			0.14	O
	08:05			0.28	S
	08:15			0.49	E
	08:25			0.68	D
	08:35			0.84	
	08:45			1.04	C
	09:05			1.34	H
	09:15			1.51	A
					M
					B
	09:32	—	CLOSED TEST TOOL FOR FINAL SHUT-IN	1.69	E
	10:00			1.68	R
	11:00			1.63	
	12:00			4.8	
	12:32	—	FINISHED FINAL SHUT-IN	–	
	12:35	—	UNSEATED PACKER	–	
	13:00	—	REVERSED OUT		
	16:00		FINISHED REVERSING		
		—	BEGAN TRIP OUT OF HOLE		

BØTTØMHØLE PRESSURE LØG

FIELD REPORT NØ. 43234E
INSTRUMENT NØ. J-230
DEPTH : 7310 FT
CAPACITY : 6400 PSI
PORT ØPENING : ØUTSIDE

COMPANY : SØHIØ PETRØLEUM CØ.
WELL : CHRISTMAS CREEK 26-15



FLØPETRØL JØHNSTØN
SCHLUMBERGER

WELL TEST DATA PRINTOUT

FIELD REPORT # : 43234E

COMPANY : SOHIO PETROLEUM CO.
WELL : CHRISTMAS CREEK 26-15

INSTRUMENT # : J-230
CAPACITY [PSI] : 6400.
DEPTH [FT] : 7310.0
PORT OPENING : OUTSIDE
TEMPERATURE [DEG F] : 118.0

LABEL POINT INFORMATION

#	TIME OF DAY HH:MM:SS	DATE DD-MM	EXPLANATION	ELAPSED TIME,MIN	BOT HOLE PRESSURE PSIA
1	5:54:42	24-DC	HYDROSTATIC MUD	-53.30	3500
2	6:48: 0	24-DC	START FLOW	0.00	158
3	6:50:32	24-DC	END FLOW & START SHUT-IN	2.54	202
4	7:51:22	24-DC	END SHUT-IN	63.37	2755
5	7:55: 1	24-DC	START FLOW	67.02	266
6	9:23:10	24-DC	END FLOW & START SHUT-IN	155.17	666
7	12:23: 9	24-DC	END SHUT-IN	335.15	2491
8	12:29: 9	24-DC	HYDROSTATIC MUD	341.15	3504

SUMMARY OF FLOW PERIODS

PERIOD	START ELAPSED TIME,MIN	END ELAPSED TIME,MIN	DURATION MIN	START PRESSURE PSIA	END PRESSURE PSIA
1	0.00	2.54	2.54	158	202
2	67.02	155.17	88.15	266	666

SUMMARY OF SHUTIN PERIODS

PERIOD	START ELAPSED TIME,MIN	END ELAPSED TIME,MIN	DURATION MIN	START PRESSURE PSIA	END PRESSURE PSIA	FINAL FLOW PRESSURE PSIA	PRODUCING TIME, MIN
1	2.54	63.37	60.83	202	2755	202	2.54
2	155.17	335.15	179.98	666	2491	666	90.69

TEST PHASE : FLOW PERIOD # 1

TIME OF DAY HH:MM:SS	DATE DD-MM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA
6:48: 0	24-OC	0.00	0.00	158
6:50:32	24-OC	2.54	2.54	202

TEST PHASE : SHUTIN PERIOD # 1
FINAL FLOW PRESSURE [PSIA] = 202
PRODUCING TIME [MIN] = 2.54

TIME OF DAY HH:MM:SS	DATE DD-MM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
6:50:32	24-OC	2.54	0.00	202	0	
6:51:32	24-OC	3.54	1.00	1036	834	0.549
6:52:32	24-OC	4.54	2.00	1865	1662	0.356
6:53:32	24-OC	5.54	3.00	2243	2041	0.266
6:54:32	24-OC	6.54	4.00	2382	2180	0.214
6:55:32	24-OC	7.54	5.00	2453	2251	0.178
6:56:32	24-OC	8.54	6.00	2499	2296	0.153
6:57:32	24-OC	9.54	7.00	2532	2329	0.134
6:58:32	24-OC	10.54	8.00	2556	2354	0.120
6:59:32	24-OC	11.54	9.00	2574	2372	0.108
7: 0:32	24-OC	12.54	10.00	2591	2389	0.098
7: 2:32	24-OC	14.54	12.00	2616	2414	0.083
7: 4:32	24-OC	16.54	14.00	2636	2434	0.072
7: 6:32	24-OC	18.54	16.00	2653	2451	0.064
7: 8:32	24-OC	20.54	18.00	2667	2465	0.057
7:10:32	24-OC	22.54	20.00	2677	2475	0.052
7:12:32	24-OC	24.54	22.00	2687	2485	0.047
7:14:32	24-OC	26.54	24.00	2695	2493	0.044
7:16:32	24-OC	28.54	26.00	2702	2500	0.040
7:18:32	24-OC	30.54	28.00	2707	2505	0.038
7:20:32	24-OC	32.54	30.00	2712	2510	0.035
7:25:32	24-OC	37.54	35.00	2725	2523	0.030
7:30:32	24-OC	42.54	40.00	2733	2531	0.027
7:35:32	24-OC	47.54	45.00	2739	2537	0.024
7:40:32	24-OC	52.54	50.00	2744	2542	0.022
7:45:32	24-OC	57.54	55.00	2749	2547	0.020
7:50:32	24-OC	62.54	60.00	2754	2552	0.018
7:51:22	24-OC	63.37	60.83	2755	2553	0.018

TEST PHASE : FLOW PERIOD # 2

TIME OF DAY HH:MM:SS	DATE DD-MM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA
7:55: 1	24-OC	67.02	0.00	266
8: 0: 1	24-OC	72.02	5.00	326
8: 5: 1	24-OC	77.02	10.00	365
8:10: 1	24-OC	82.02	15.00	389
8:15: 1	24-OC	87.02	20.00	413
8:20: 1	24-OC	92.02	25.00	434
8:25: 1	24-OC	97.02	30.00	456
8:30: 1	24-OC	102.02	35.00	478
8:35: 1	24-OC	107.02	40.00	498
8:40: 1	24-OC	112.02	45.00	519
8:45: 1	24-OC	117.02	50.00	536
8:50: 1	24-OC	122.02	55.00	553
8:55: 1	24-OC	127.02	60.00	572
9: 0: 1	24-OC	132.02	65.00	588
9: 5: 1	24-OC	137.02	70.00	606
9:10: 1	24-OC	142.02	75.00	623
9:15: 1	24-OC	147.02	80.00	639
9:20: 1	24-OC	152.02	85.00	654
9:23:10	24-OC	155.17	88.15	666

TEST PHASE : SHUTIN PERIOD # 2
FINAL FLOW PRESSURE [PSIA] = 666
PRODUCING TIME [MIN] = 90.69

TIME OF DAY HH:MM:SS	DATE DD-MM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
9:23:10	24-OC	155.17	0.00	666	0	
9:24:10	24-OC	156.17	1.00	1289	623	1.962
9:25:10	24-OC	157.17	2.00	1552	886	1.666
9:26:10	24-OC	158.17	3.00	1646	980	1.495
9:27:10	24-OC	159.17	4.00	1703	1037	1.374
9:28:10	24-OC	160.17	5.00	1747	1081	1.282
9:29:10	24-OC	161.17	6.00	1787	1121	1.207
9:30:10	24-OC	162.17	7.00	1817	1151	1.145
9:31:10	24-OC	163.17	8.00	1846	1180	1.091
9:32:10	24-OC	164.17	9.00	1871	1205	1.044
9:33:10	24-OC	165.17	10.00	1896	1230	1.003
9:35:10	24-OC	167.17	12.00	1936	1270	0.932
9:37:10	24-OC	169.17	14.00	1970	1304	0.874
9:39:10	24-OC	171.17	16.00	2002	1336	0.824
9:41:10	24-OC	173.17	18.00	2030	1364	0.781
9:43:10	24-OC	175.17	20.00	2056	1390	0.743
9:45:10	24-OC	177.17	22.00	2078	1412	0.709
9:47:10	24-OC	179.17	24.00	2098	1432	0.679
9:49:10	24-OC	181.17	26.00	2118	1452	0.652

TEST PHASE : SHUTIN PERIOD # 2
FINAL FLOW PRESSURE [PSIA] = 666
PRODUCING TIME [MIN] = 90.69

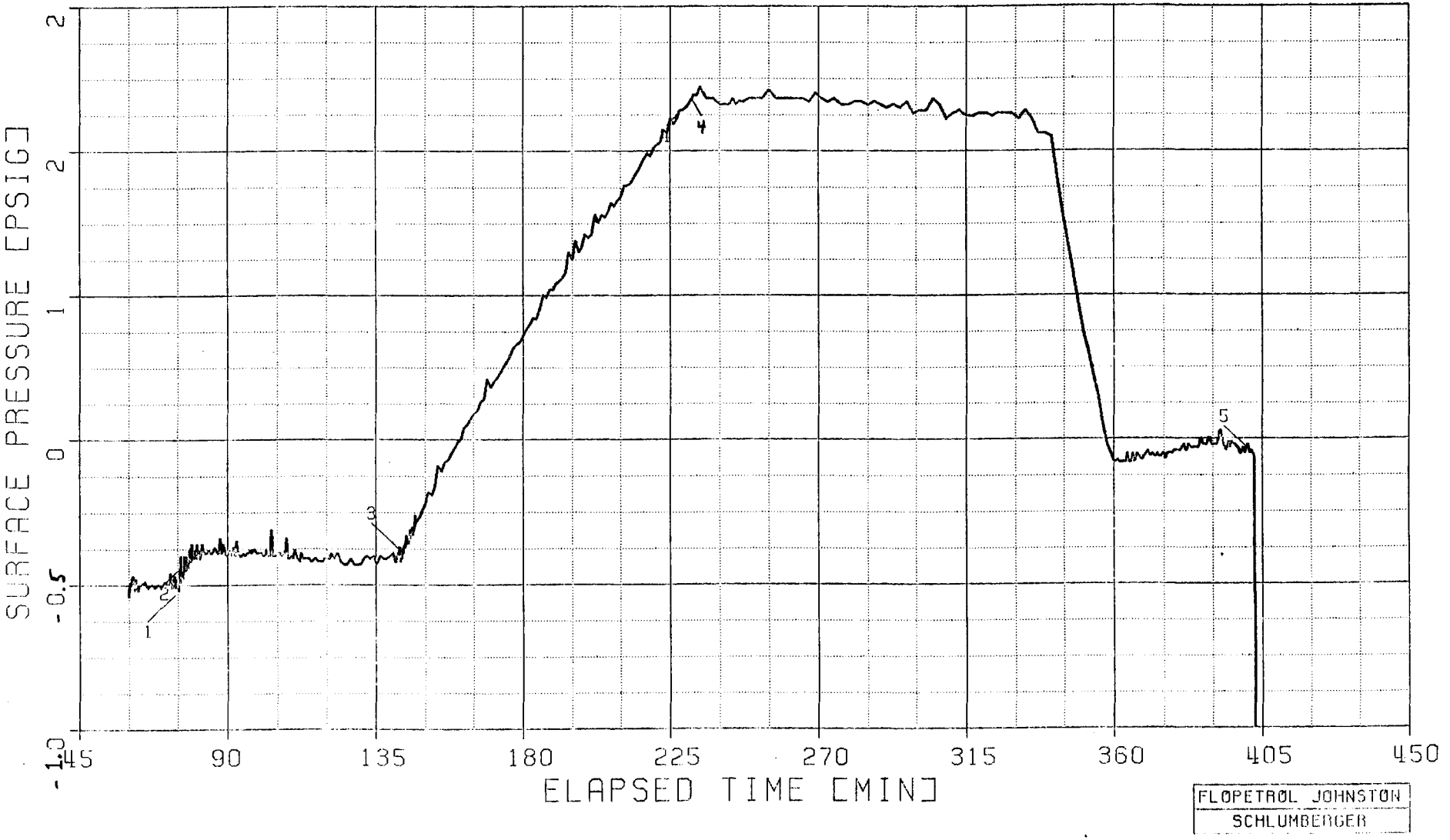
TIME OF DAY HH:MM:SS	DATE DD-MM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
9:51:10	24-OC	183.17	28.00	2135	1469	0.627
9:53:10	24-OC	185.17	30.00	2151	1485	0.605
9:58:10	24-OC	190.17	35.00	2187	1521	0.555
10: 3:10	24-OC	195.17	40.00	2216	1550	0.514
10: 8:10	24-OC	200.17	45.00	2243	1578	0.479
10:13:10	24-OC	205.17	50.00	2267	1601	0.449
10:18:10	24-OC	210.17	55.00	2288	1622	0.423
10:23:10	24-OC	215.17	60.00	2307	1641	0.400
10:28:10	24-OC	220.17	65.00	2324	1658	0.379
10:33:10	24-OC	225.17	70.00	2340	1674	0.361
10:38:10	24-OC	230.17	75.00	2352	1686	0.344
10:43:10	24-OC	235.17	80.00	2365	1699	0.329
10:48:10	24-OC	240.17	85.00	2376	1710	0.315
10:53:10	24-OC	245.17	90.00	2387	1721	0.303
10:58:10	24-OC	250.17	95.00	2396	1730	0.291
11: 3:10	24-OC	255.17	100.00	2405	1739	0.280
11: 8:10	24-OC	260.17	105.00	2413	1748	0.270
11:13:10	24-OC	265.17	110.00	2421	1755	0.261
11:18:10	24-OC	270.17	115.00	2427	1762	0.253
11:23:10	24-OC	275.17	120.00	2434	1768	0.244
11:28:10	24-OC	280.17	125.00	2440	1774	0.237
11:33:10	24-OC	285.17	130.00	2446	1780	0.230
11:38:10	24-OC	290.17	135.00	2452	1786	0.223
11:43:10	24-OC	295.17	140.00	2456	1790	0.217
11:48:10	24-OC	300.17	145.00	2460	1794	0.211
11:53:10	24-OC	305.17	150.00	2465	1799	0.205
11:58:10	24-OC	310.17	155.00	2470	1804	0.200
12: 3:10	24-OC	315.17	160.00	2474	1808	0.195
12: 8:10	24-OC	320.17	165.00	2478	1812	0.190
12:13:10	24-OC	325.17	170.00	2482	1816	0.186
12:18:10	24-OC	330.17	175.00	2486	1820	0.181
12:23: 9	24-OC	335.15	179.98	2491	1825	0.177

SURFACE PRESSURE LØG

FIELD REPORT NØ. 43234E

COMPANY : SØHIØ

WELL : CHRISTMAS CREEK 26-15



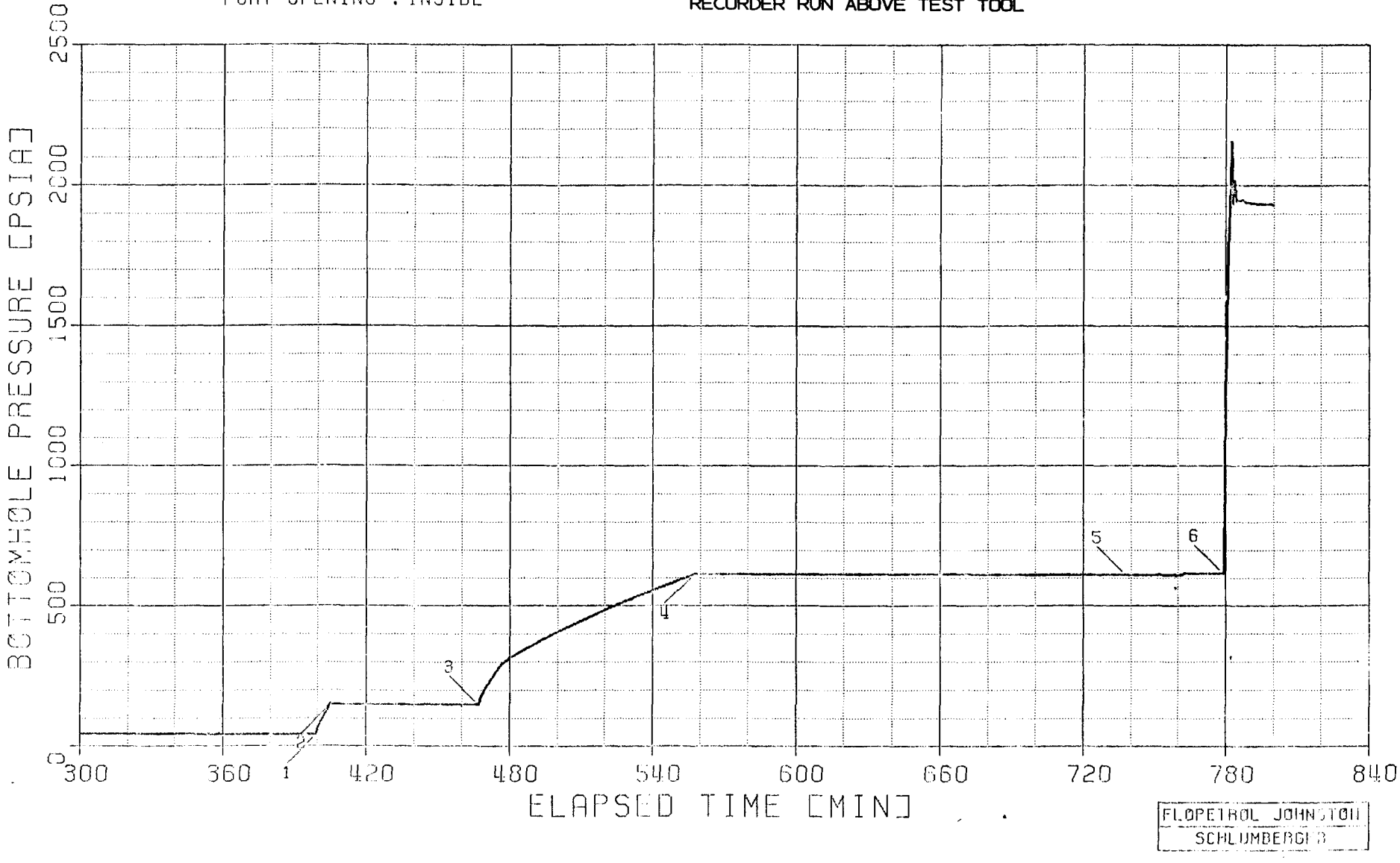
FLOPETROL JOHNSTON
SCHLUMBERGER

BOTTOMHOLE PRESSURE LOG

FIELD REPORT NO. 43234E
INSTRUMENT NO. 2065
DEPTH : 7265 FT
CAPACITY : 10000 PSI
PORT OPENING : INSIDE

COMPANY : SOHIO PETROLEUM COMPANY
WELL : CHRISTMAS CREEK 26-15

RECORDER RUN ABOVE TEST TOOL



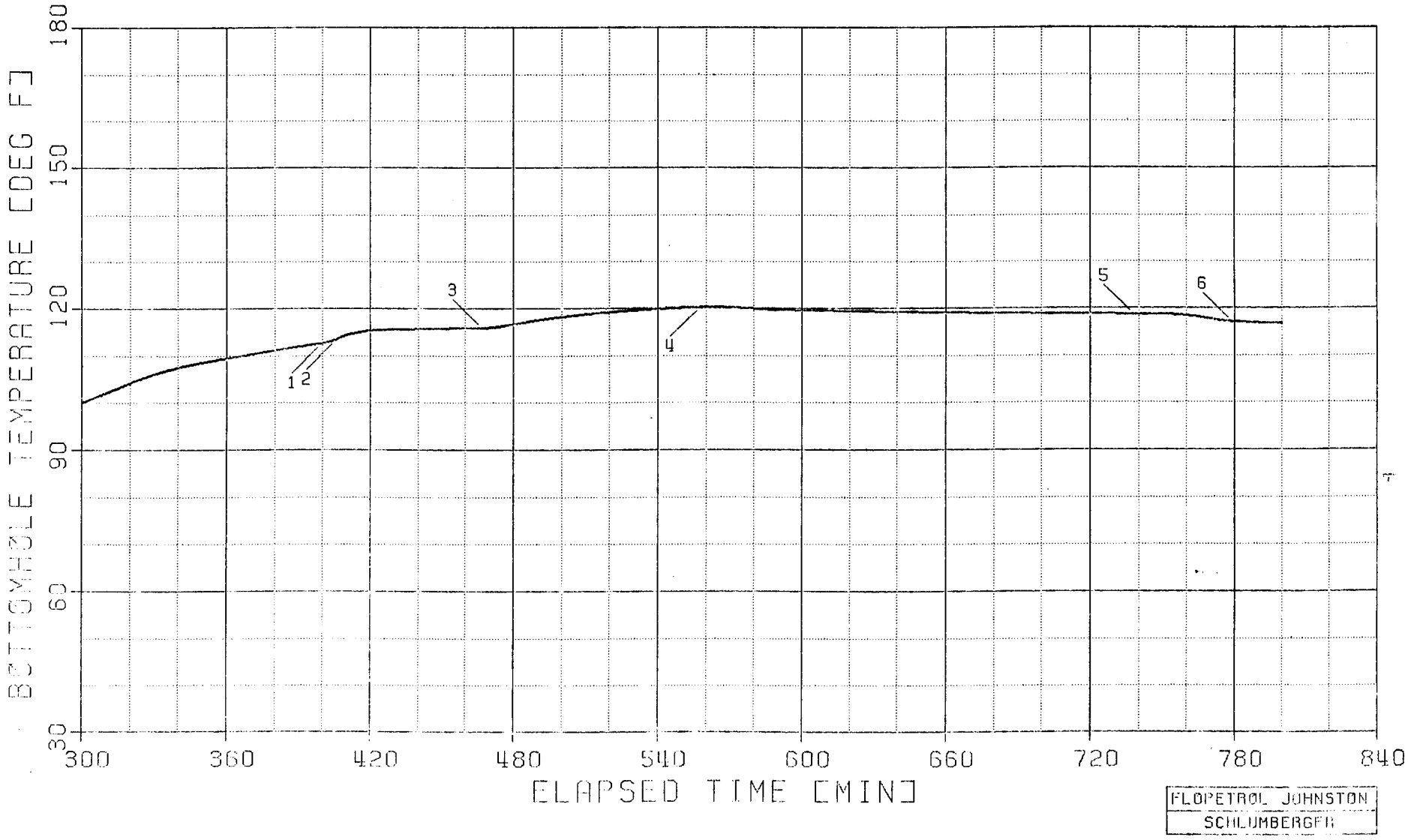
FLOPETROL JOHNSTON
SCHLUMBERGER

BØTTØMHØLE TEMPERATURE LØG

FIELD REPORT NØ. 43234E
INSTRUMENT NØ. 2065
DEPTH : 7265 FT

COMPANY : SØHIØ PETRØLEUM COMPANY
WELL : CHRISTMAS CREEK 26-15

RECORDER RUN ABOVE TEST TOOL



FLOPETROL JOHNSTON
SCHLUMBERGER

WELL TEST DATA PRINTOUT

FIELD REPORT # : 43234E

COMPANY : SOHIO PETROLEUM COMPANY
WELL : CHRISTMAS CREEK 26-15

INSTRUMENT # : 2065
CAPACITY [PSI] : 10000.
DEPTH [FT] : 7265.0
PORT OPENING : INSIDE (ABOVE)

LABEL POINT INFORMATION

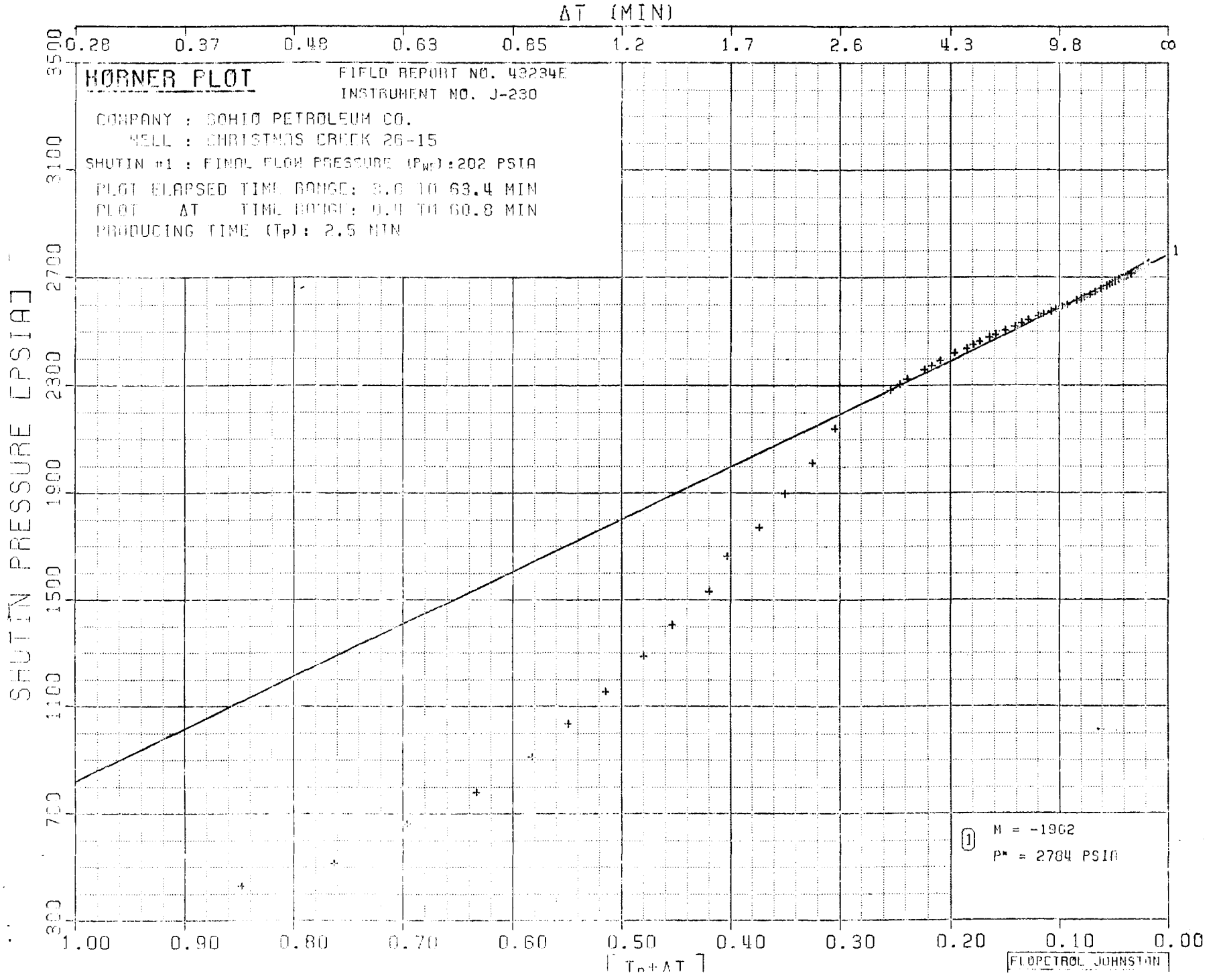
#	TIME OF DAY HH:MM:SS	DATE DD-MM	EXPLANATION	ELAPSED TIME,MIN	BOT HOLE PRESSURE PSIA	BOT HOLE TEMP. DEG F
1	6:35:30	29-DC	START FLOW	399.50	40.91	112.5
2	6:41:30	29-DC	END FLOW & START SHUT-IN	405.50	148.36	113.3
3	7:43: 0	29-DC	END SHUT-IN & START FLOW	467.00	146.77	115.8
4	9:13:30	29-DC	END FLOW & START SHUT-IN	557.50	611.30	120.2
5	12:14: 0	29-DC	END SHUT-IN	738.00	609.70	118.7
6	12:55: 0	29-DC	STARTED REVERSING	779.00	615.47	117.1

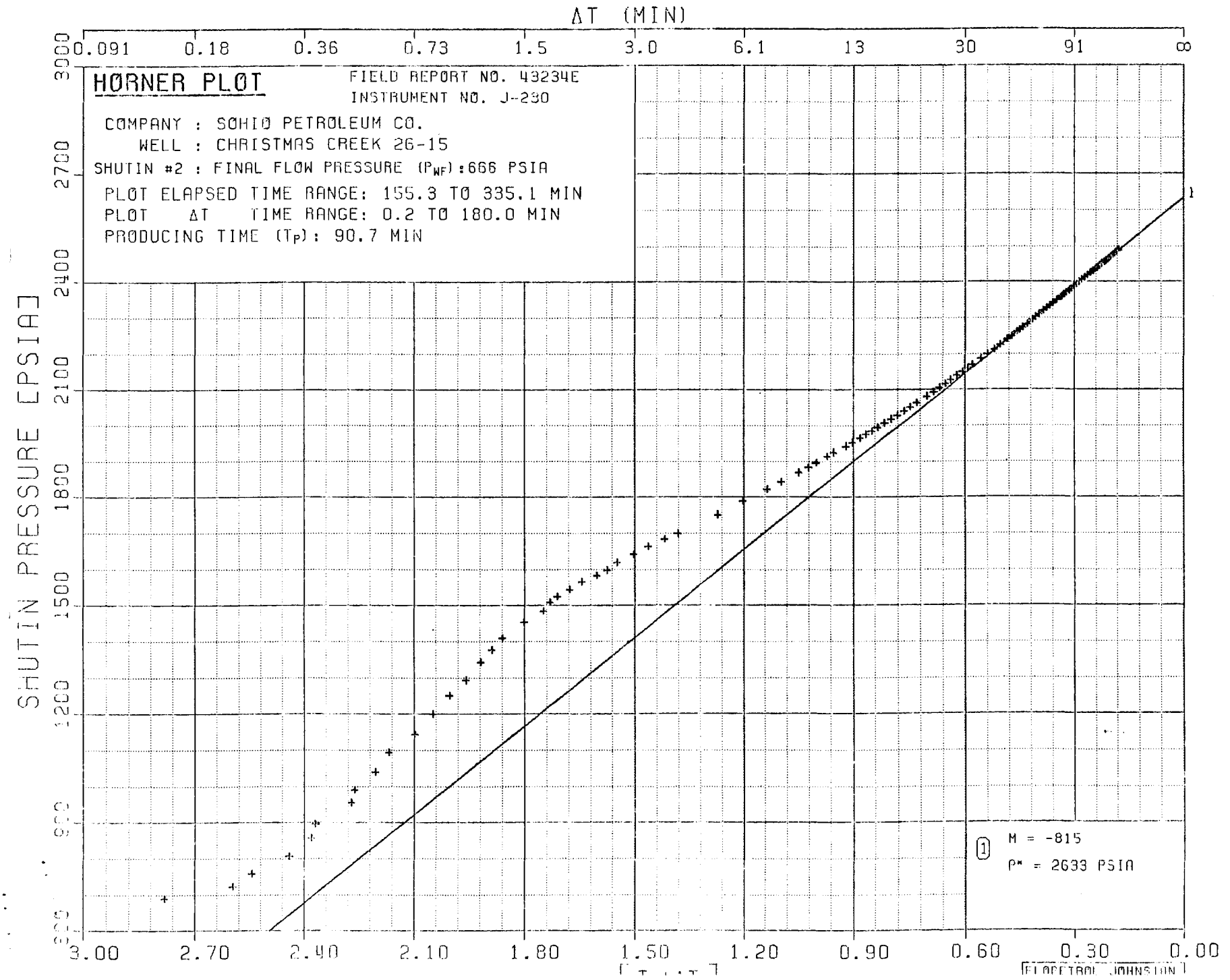
SUMMARY OF FLOW PERIODS

PERIOD	START ELAPSED TIME,MIN	END ELAPSED TIME,MIN	DURATION MIN	START PRESSURE PSIA	END PRESSURE PSIA
1	399.50	405.50	6.00	40.91	148.36
2	467.00	557.50	90.50	146.77	611.30

SUMMARY OF SHUTIN PERIODS

PERIOD	START ELAPSED TIME,MIN	END ELAPSED TIME,MIN	DURATION MIN	START PRESSURE PSIA	END PRESSURE PSIA	FINAL FLOW PRESSURE PSIA	PRODUCING TIME, MIN
1	405.50	467.00	61.50	148.36	146.77	148.36	6.00
2	557.50	738.00	180.50	611.30	609.70	611.30	96.50


ΔT (MIN)
0.28
0.37
0.48
0.63
0.85
1.2
1.7
2.6
4.3
9.8
∞
HORNER PLOT
FIELD REPORT NO. 43234E
INSTRUMENT NO. J-230
COMPANY : SOHIO PETROLEUM CO.
WELL : CHRISTMAS CREEK 26-15
SHUTIN #1 : FINAL FLOW PRESSURE (P_{wf}):202 PSIA
PLOT ELAPSED TIME RANGE: 3.0 TO 63.4 MIN
PLOT ΔT TIME RANGE: 0.4 TO 60.8 MIN
PRODUCING TIME (T_p): 2.5 MIN
SHUTIN PRESSURE [PSIA]
3500
3100
2700
2300
1900
1500
1100
700
300
1
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
[T_p+ΔT]
1
M = -1962
P* = 2784 PSIA
FLOPETROL JOHNSTON


ΔT (MIN)
0.091
0.18
0.36
0.73
1.5
3.0
6.1
13
30
91
∞
HØRNER PLØT
FIELD REPORT NO. 43234E
INSTRUMENT NO. J-230
COMPANY : SØHIØ PETROLEUM CO.
WELL : CHRISTMAS CREEK 26-15
SHUTIN #2 : FINAL FLOW PRESSURE (P_{WF}):666 PSIA
PLØT ELAPSED TIME RANGE: 155.3 TØ 335.1 MIN
PLØT ΔT TIME RANGE: 0.2 TØ 180.0 MIN
PRODUCING TIME (T_P): 90.7 MIN
SHUTIN PRESSURE [PSIA]
3000
2700
2400
2100
1800
1500
1200
3.00
2.70
2.40
2.10
1.80
1.50
1.20
0.90
0.60
0.30
0.00
1
M = -815
P* = 2633 PSIA

FLOPETROL JOHNSTON
Schlumberger

WELL PERFORMANCE TEST REPORT

A Production Systems Analysis (NODAL)
Based On
Drillstem Test Data

Test Date: 10/29/84

Report No.: 43234 E

COMPANY SOHIO

WELL CHRISTMAS CREEK 26-15

TEST IDENTIFICATION

Test Type	MFE-OH TELEFLOW
Test Number	1
Formation	PHOSPHORIA
Test Interval	7302-7383 FT.
Reference Depth	K.B.

WELL LOCATION

Field	CHRISTMAS CREEK
County	SUMMIT
State	UTAH
Sec / Twn / Rng	SEC. 25-T2N-R108W
Elevation	NOT GIVEN

HOLE CONDITIONS

Total Depth (MVD/TVD)	7383 FT.
Hole Size / Deviation Angle	12 1/4 IN.
Csg / Liner ID	–
Perf'd Interval	–
Shot Density / Phasing	–
Gun Type / Perf Cond	–

MUD PROPERTIES

Mud Type	DISPERSED
Mud Weight	9.0 LB./GAL.
Mud Resistivity	.53 OHM -M @ 68°F
Filtrate Resistivity	1.4 OHM -M @ 80°F
Filtrate Chlorides	1200 PPM
Filtrate Nitrates	–

INITIAL TEST CONDITIONS

Gas Cushion Type	NONE
Surface Pressure	–
Liquid Cushion Type	NONE
Height Above DST Valve	–

TEST STRING CONFIGURATION 6620'/3.826"

Pipe Length / ID	273'/3.00" (HWP)
Collar Length / ID	98'/2.25";244'/2.83"
Packer Depth(s)	7296 & 7302 FT.
BH Choke Size	15/16"

NET PIPE RECOVERY

Volume	Fluid Type	Physical Properties
14.7 BBLS	WATER	10 OHM -M @ 74°F
		200 PPM CHL

NET SAMPLE CHAMBER RECOVERY

Volume	Fluid Type	Physical Properties
.42 FT.^{3}	GAS	CORRECTED TO PWF
2230 CC	WATER	10 OHM -M @ 74°F
		200 PPM CHL

Pressure: 10 PSIG	GOR: –	GLR: 30

INTERPRETATION RESULTS

Reservoir Pressure @Gauge Depth:	2633 PSIA (FSI)
Gauge Depth	7310 FT.
Hydrostatic Gradient	.360 PSI/FT.
Potentiometric Surface	N/A
Effective Permeability to WATER:	1.63 MD.
Transmissibility	44.43 MD. FT./CPS
Skin Factor / Damage Ratio	-2.33/.55
Omega / Lambda (2ϕ System)	–
Radius of Investigation	128 FT.
Measured Wellbore Storage	–

ROCK / FLUID / WELLBORE PROPERTIES

Reservoir Temperature	120°F
Analysis Fluid Type	WATER
Formation Volume Factor	1.01 BBL/BBL
Viscosity	.55 CPS
Z-Factor (gas only)	–
Net Pay	15 FT.
Porosity	10% EST.
Total System Compressibility	3.0×10^{-6} 1/PSI
Wellbore Radius	.510 FT.
Expected Wellbore Storage	–

FLOW RATE DURING DST

220.5 BWPD AVG. RATE

MAXIMUM FLOW RATE POTENTIAL AFTER COMPLETION

NO NODAL SYSTEMS ANALYSIS WAS RUN DUE TO THE NATURE OF FLUIDS PRODUCED

This rate is based on a specific completion design & producing time. Call FJS for details.

FJS-5 B14059

JOHNSTON-MACCO
Schlumberger

DST EVENT SUMMARY

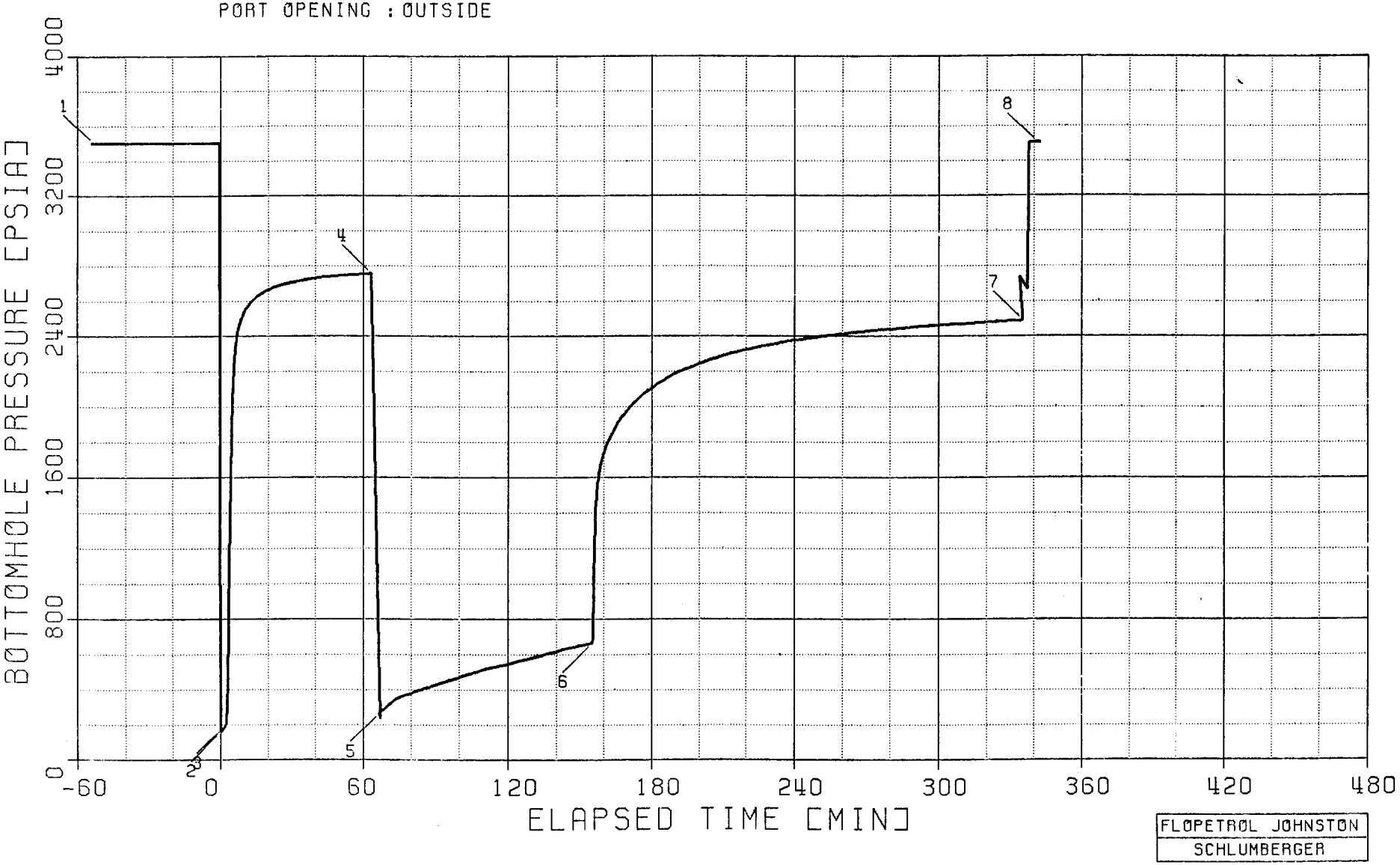
Field Report # 43234 E

DATE (M/D/Y)	TIME (HR:MIN)	EVENT E.T. (MIN)	EVENT DESCRIPTION	SURFACE PRESSURE (PSIG)	FLOOR MANIFOLD CHOKE SIZE (64ths INCH)
10/29/84	06:48	—	SET PACKER		
	06:50	—	OPENED TEST TOOL FOR INITIAL FLOW	0.0	T
	06:52			0.05	E
					L
					E
					F
	06:55	—	CLOSED TEST TOOL FOR INITIAL SHUT-IN	0.10	L
	07:15			0.10	O
					W
					C
	07:58	—	OPENED TEST TOOL FOR FINAL FLOW	0.10	L
	08:00			0.14	O
	08:05			0.28	S
	08:15			0.49	E
	08:25			0.68	D
	08:35			0.84	
	08:45			1.04	C
	09:05			1.34	H
	09:15			1.51	A
					M
					B
	09:32	—	CLOSED TEST TOOL FOR FINAL SHUT-IN	1.69	E
	10:00			1.68	R
	11:00			1.63	
	12:00			4.8	
	12:32	—	FINISHED FINAL SHUT-IN	-	
	12:35	—	UNSEATED PACKER	-	
	13:00	—	REVERSED OUT		
	16:00		FINISHED REVERSING		
		—	BEGAN TRIP OUT OF HOLE		

BØTTØMHØLE PRESSURE LØG

FIELD REPORT NØ. 43234E
INSTRUMENT NØ. J-230
DEPTH : 7310 FT
CAPACITY : 6400 PSI
PORT ØPENING : ØUTSIDE

COMPANY : SØHIØ PETRØLEUM CØ.
WELL : CHRISTMAS CREEK 26-15



FLØPETRØL JØHNSTØN
SCHLUMBERGER

WELL TEST DATA PRINTOUT

FIELD REPORT # : 43234E

COMPANY : SOHIO PETROLEUM CO.
WELL : CHRISTMAS CREEK 26-15

INSTRUMENT # : J-230
CAPACITY [PSI] : 6400.
DEPTH [FT] : 7310.0
PORT OPENING : OUTSIDE
TEMPERATURE [DEG F] : 118.0

LABEL POINT INFORMATION

#	TIME OF DAY HH:MM:SS	DATE DD-MM	EXPLANATION	ELAPSED TIME,MIN	BOT HOLE PRESSURE PSIA
1	5:54:42	24-DC	HYDROSTATIC MUD	-53.30	3500
2	6:48: 0	24-DC	START FLOW	0.00	158
3	6:50:32	24-DC	END FLOW & START SHUT-IN	2.54	202
4	7:51:22	24-DC	END SHUT-IN	63.37	2755
5	7:55: 1	24-DC	START FLOW	67.02	266
6	9:23:10	24-DC	END FLOW & START SHUT-IN	155.17	666
7	12:23: 9	24-DC	END SHUT-IN	335.15	2491
8	12:29: 9	24-DC	HYDROSTATIC MUD	341.15	3504

SUMMARY OF FLOW PERIODS

PERIOD	START ELAPSED TIME,MIN	END ELAPSED TIME,MIN	DURATION MIN	START PRESSURE PSIA	END PRESSURE PSIA
1	0.00	2.54	2.54	158	202
2	67.02	155.17	88.15	266	666

SUMMARY OF SHUTIN PERIODS

PERIOD	START ELAPSED TIME,MIN	END ELAPSED TIME,MIN	DURATION MIN	START PRESSURE PSIA	END PRESSURE PSIA	FINAL FLOW PRESSURE PSIA	PRODUCING TIME, MIN
1	2.54	63.37	60.83	202	2755	202	2.54
2	155.17	335.15	179.98	666	2491	666	90.69

TEST PHASE : FLOW PERIOD # 1

TIME OF DAY HH:MM:SS	DATE DD-MM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA
6:48: 0	24-OC	0.00	0.00	158
6:50:32	24-OC	2.54	2.54	202

TEST PHASE : SHUTIN PERIOD # 1
FINAL FLOW PRESSURE [PSIA] = 202
PRODUCING TIME [MIN] = 2.54

TIME OF DAY HH:MM:SS	DATE DD-MM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
6:50:32	24-OC	2.54	0.00	202	0	
6:51:32	24-OC	3.54	1.00	1036	834	0.549
6:52:32	24-OC	4.54	2.00	1865	1662	0.356
6:53:32	24-OC	5.54	3.00	2243	2041	0.266
6:54:32	24-OC	6.54	4.00	2382	2180	0.214
6:55:32	24-OC	7.54	5.00	2453	2251	0.178
6:56:32	24-OC	8.54	6.00	2499	2296	0.153
6:57:32	24-OC	9.54	7.00	2532	2329	0.134
6:58:32	24-OC	10.54	8.00	2556	2354	0.120
6:59:32	24-OC	11.54	9.00	2574	2372	0.108
7: 0:32	24-OC	12.54	10.00	2591	2389	0.098
7: 2:32	24-OC	14.54	12.00	2616	2414	0.083
7: 4:32	24-OC	16.54	14.00	2636	2434	0.072
7: 6:32	24-OC	18.54	16.00	2653	2451	0.064
7: 8:32	24-OC	20.54	18.00	2667	2465	0.057
7:10:32	24-OC	22.54	20.00	2677	2475	0.052
7:12:32	24-OC	24.54	22.00	2687	2485	0.047
7:14:32	24-OC	26.54	24.00	2695	2493	0.044
7:16:32	24-OC	28.54	26.00	2702	2500	0.040
7:18:32	24-OC	30.54	28.00	2707	2505	0.038
7:20:32	24-OC	32.54	30.00	2712	2510	0.035
7:25:32	24-OC	37.54	35.00	2725	2523	0.030
7:30:32	24-OC	42.54	40.00	2733	2531	0.027
7:35:32	24-OC	47.54	45.00	2739	2537	0.024
7:40:32	24-OC	52.54	50.00	2744	2542	0.022
7:45:32	24-OC	57.54	55.00	2749	2547	0.020
7:50:32	24-OC	62.54	60.00	2754	2552	0.018
7:51:22	24-OC	63.37	60.83	2755	2553	0.018

TEST PHASE : FLOW PERIOD # 2

TIME OF DAY HH:MM:SS	DATE DD-MM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA
7:55: 1	24-OC	67.02	0.00	266
8: 0: 1	24-OC	72.02	5.00	326
8: 5: 1	24-OC	77.02	10.00	365
8:10: 1	24-OC	82.02	15.00	389
8:15: 1	24-OC	87.02	20.00	413
8:20: 1	24-OC	92.02	25.00	434
8:25: 1	24-OC	97.02	30.00	456
8:30: 1	24-OC	102.02	35.00	478
8:35: 1	24-OC	107.02	40.00	498
8:40: 1	24-OC	112.02	45.00	519
8:45: 1	24-OC	117.02	50.00	536
8:50: 1	24-OC	122.02	55.00	553
8:55: 1	24-OC	127.02	60.00	572
9: 0: 1	24-OC	132.02	65.00	588
9: 5: 1	24-OC	137.02	70.00	606
9:10: 1	24-OC	142.02	75.00	623
9:15: 1	24-OC	147.02	80.00	639
9:20: 1	24-OC	152.02	85.00	654
9:23:10	24-OC	155.17	88.15	666

TEST PHASE : SHUTIN PERIOD # 2
FINAL FLOW PRESSURE [PSIA] = 666
PRODUCING TIME [MIN] = 90.69

TIME OF DAY HH:MM:SS	DATE DD-MM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
9:23:10	24-OC	155.17	0.00	666	0	
9:24:10	24-OC	156.17	1.00	1289	623	1.962
9:25:10	24-OC	157.17	2.00	1552	886	1.666
9:26:10	24-OC	158.17	3.00	1646	980	1.495
9:27:10	24-OC	159.17	4.00	1703	1037	1.374
9:28:10	24-OC	160.17	5.00	1747	1081	1.282
9:29:10	24-OC	161.17	6.00	1787	1121	1.207
9:30:10	24-OC	162.17	7.00	1817	1151	1.145
9:31:10	24-OC	163.17	8.00	1846	1180	1.091
9:32:10	24-OC	164.17	9.00	1871	1205	1.044
9:33:10	24-OC	165.17	10.00	1896	1230	1.003
9:35:10	24-OC	167.17	12.00	1936	1270	0.932
9:37:10	24-OC	169.17	14.00	1970	1304	0.874
9:39:10	24-OC	171.17	16.00	2002	1336	0.824
9:41:10	24-OC	173.17	18.00	2030	1364	0.781
9:43:10	24-OC	175.17	20.00	2056	1390	0.743
9:45:10	24-OC	177.17	22.00	2078	1412	0.709
9:47:10	24-OC	179.17	24.00	2098	1432	0.679
9:49:10	24-OC	181.17	26.00	2118	1452	0.652

TEST PHASE : SHUTIN PERIOD # 2
FINAL FLOW PRESSURE [PSIA] = 666
PRODUCING TIME [MIN] = 90.69

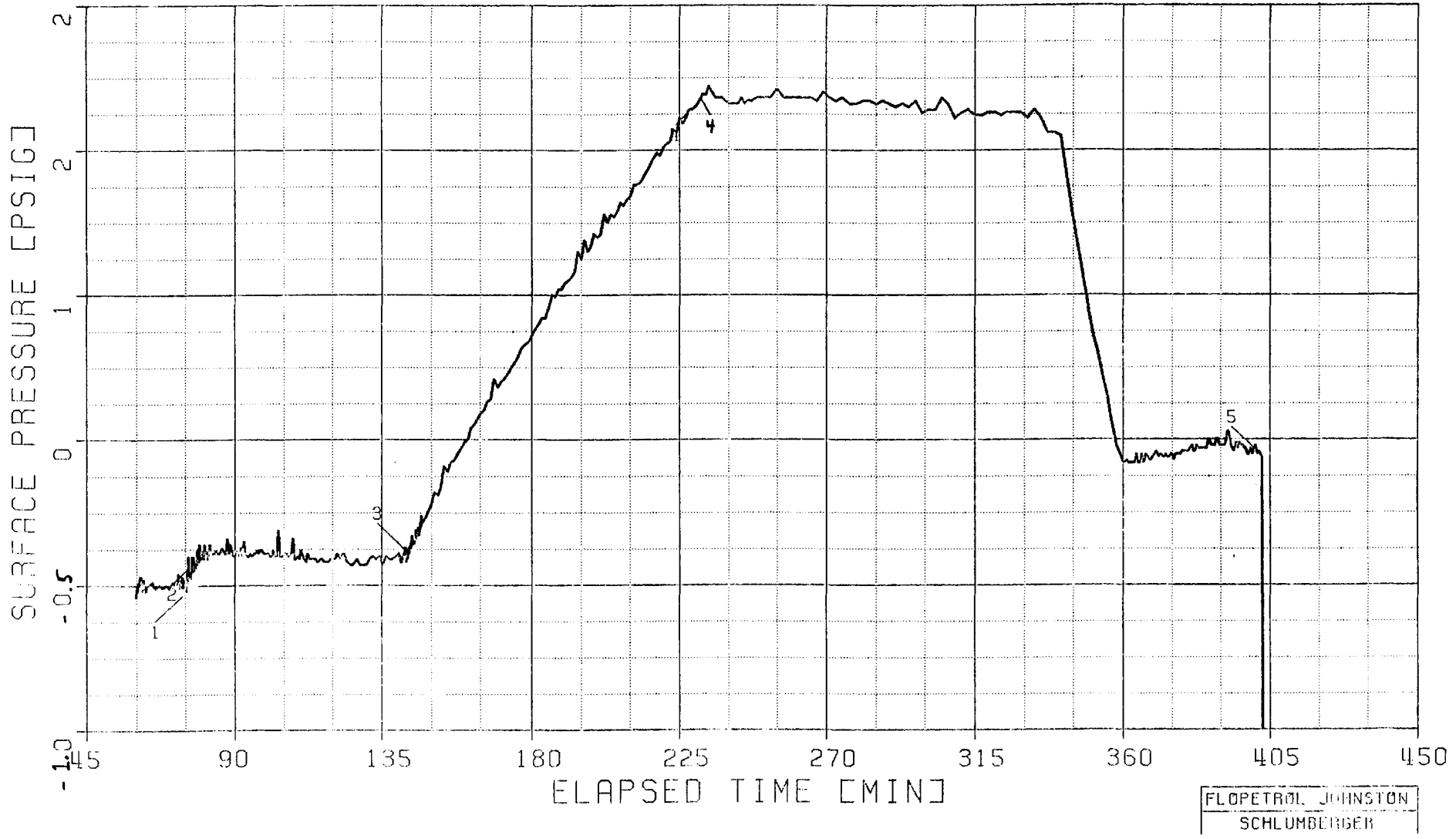
TIME OF DAY HH:MM:SS	DATE DD-MM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
9:51:10	24-OC	183.17	28.00	2135	1469	0.627
9:53:10	24-OC	185.17	30.00	2151	1485	0.605
9:58:10	24-OC	190.17	35.00	2187	1521	0.555
10: 3:10	24-OC	195.17	40.00	2216	1550	0.514
10: 8:10	24-OC	200.17	45.00	2243	1578	0.479
10:13:10	24-OC	205.17	50.00	2267	1601	0.449
10:18:10	24-OC	210.17	55.00	2288	1622	0.423
10:23:10	24-OC	215.17	60.00	2307	1641	0.400
10:28:10	24-OC	220.17	65.00	2324	1658	0.379
10:33:10	24-OC	225.17	70.00	2340	1674	0.361
10:38:10	24-OC	230.17	75.00	2352	1686	0.344
10:43:10	24-OC	235.17	80.00	2365	1699	0.329
10:48:10	24-OC	240.17	85.00	2376	1710	0.315
10:53:10	24-OC	245.17	90.00	2387	1721	0.303
10:58:10	24-OC	250.17	95.00	2396	1730	0.291
11: 3:10	24-OC	255.17	100.00	2405	1739	0.280
11: 8:10	24-OC	260.17	105.00	2413	1748	0.270
11:13:10	24-OC	265.17	110.00	2421	1755	0.261
11:18:10	24-OC	270.17	115.00	2427	1762	0.253
11:23:10	24-OC	275.17	120.00	2434	1768	0.244
11:28:10	24-OC	280.17	125.00	2440	1774	0.237
11:33:10	24-OC	285.17	130.00	2446	1780	0.230
11:38:10	24-OC	290.17	135.00	2452	1786	0.223
11:43:10	24-OC	295.17	140.00	2456	1790	0.217
11:48:10	24-OC	300.17	145.00	2460	1794	0.211
11:53:10	24-OC	305.17	150.00	2465	1799	0.205
11:58:10	24-OC	310.17	155.00	2470	1804	0.200
12: 3:10	24-OC	315.17	160.00	2474	1808	0.195
12: 8:10	24-OC	320.17	165.00	2478	1812	0.190
12:13:10	24-OC	325.17	170.00	2482	1816	0.186
12:18:10	24-OC	330.17	175.00	2486	1820	0.181
12:23: 9	24-OC	335.15	179.98	2491	1825	0.177

SURFACE PRESSURE LØG

FIELD REPORT NØ. 43234E

COMPANY : SØHIØ

WELL : CHRISTMAS CREEK 26-15

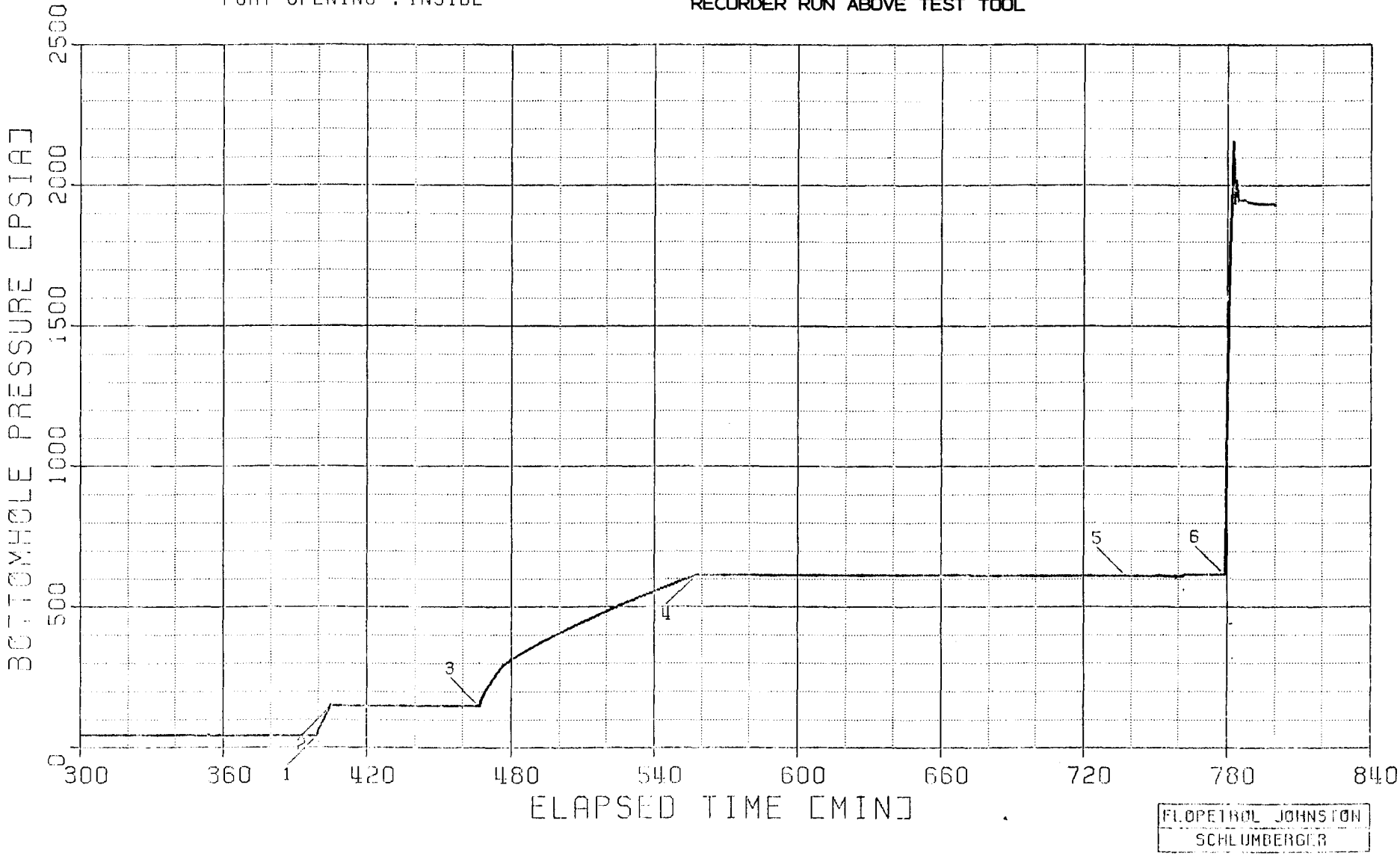


BØTTØMHØLE PRESSURE LØG

FIELD REPORT NO. 43234E
INSTRUMENT NO. 2065
DEPTH : 7265 FT
CAPACITY : 10000 PSI
PORT OPENING : INSIDE

COMPANY : SOHIO PETROLEUM COMPANY
WELL : CHRISTMAS CREEK 26-15

RECORDER RUN ABOVE TEST TOOL



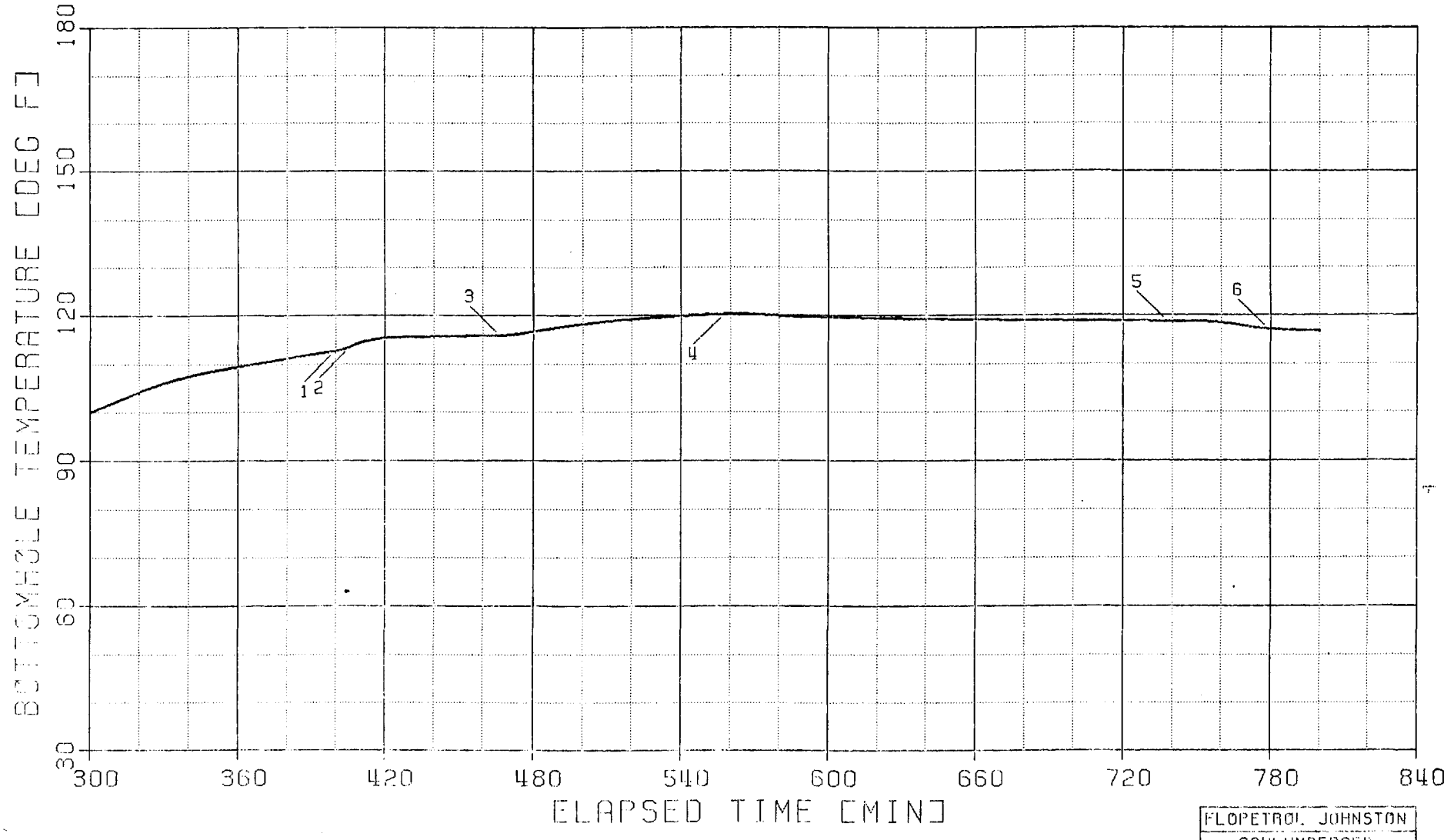
FLOPETROL JOHNSTON
SCHLUMBERGER

BØTTØMHØLE TEMPERATURE LØG

FIELD REPORT NØ. 43234E
INSTRUMENT NØ. 2065
DEPTH : 7265 FT

COMPANY : SØHIØ PETRØLEUM COMPANY
WELL : CHRISTMAS CREEK 26-15

RECORDER RUN ABOVE TEST TOOL



FLOPETROL JOHNSTON
SCHLUMBERGER

WELL TEST DATA PRINTOUT

FIELD REPORT # : 43234E

COMPANY : SOHIO PETROLEUM COMPANY
WELL : CHRISTMAS CREEK 26-15

INSTRUMENT # : 2065
CAPACITY [PSI] : 10000.
DEPTH [FT] : 7265.0
PORT OPENING : INSIDE (ABOVE)

LABEL POINT INFORMATION

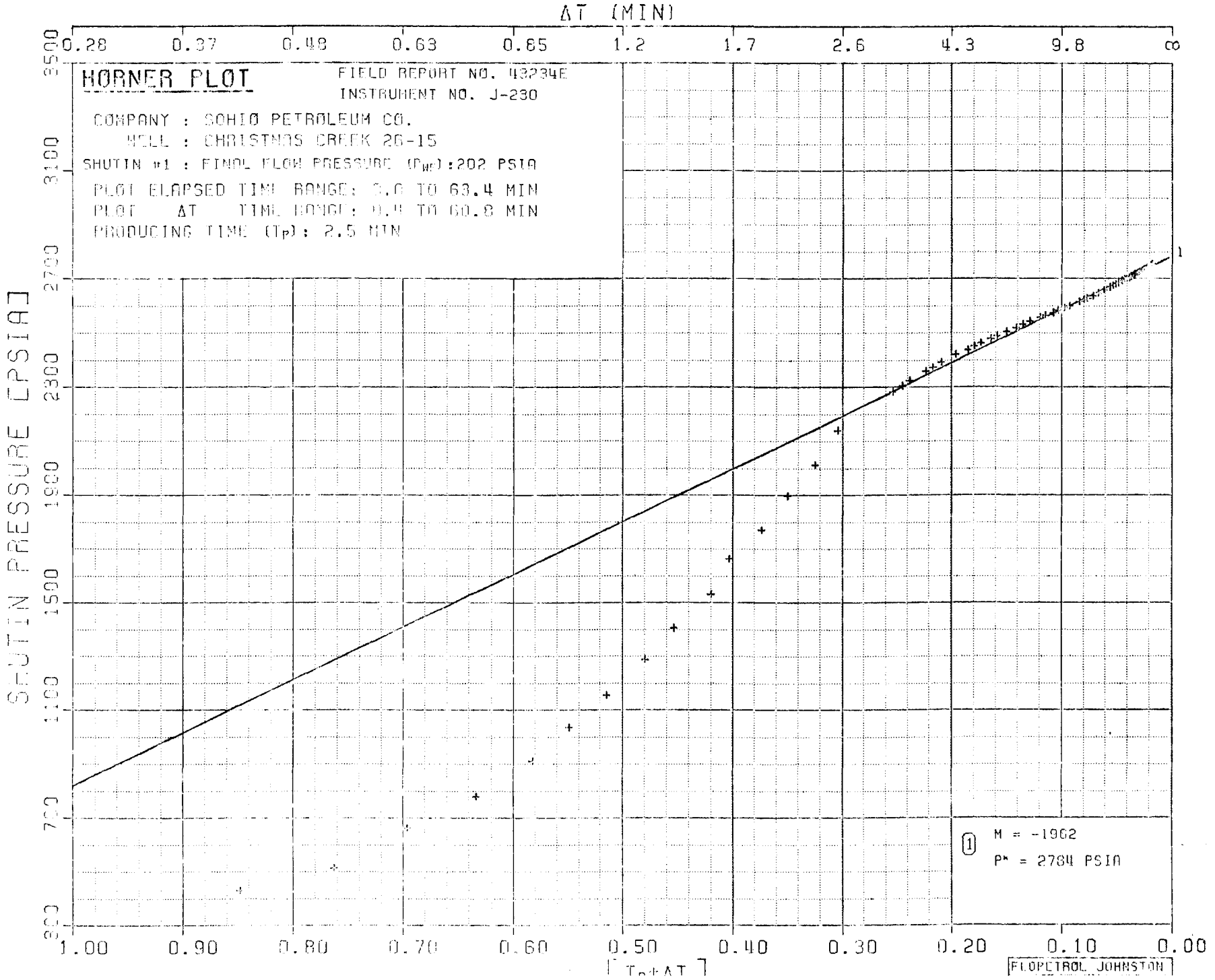
#	TIME OF DAY HH:MM:SS	DATE DD-MM	EXPLANATION	ELAPSED TIME, MIN	BOT HOLE PRESSURE PSIA	BOT HOLE TEMP. DEG F
1	6:35:30	29-DC	START FLOW	399.50	40.91	112.5
2	6:41:30	29-DC	END FLOW & START SHUT-IN	405.50	148.36	113.3
3	7:43: 0	29-DC	END SHUT-IN & START FLOW	467.00	146.77	115.8
4	9:13:30	29-DC	END FLOW & START SHUT-IN	557.50	611.30	120.2
5	12:14: 0	29-DC	END SHUT-IN	738.00	609.70	118.7
6	12:55: 0	29-DC	STARTED REVERSING	779.00	615.47	117.1

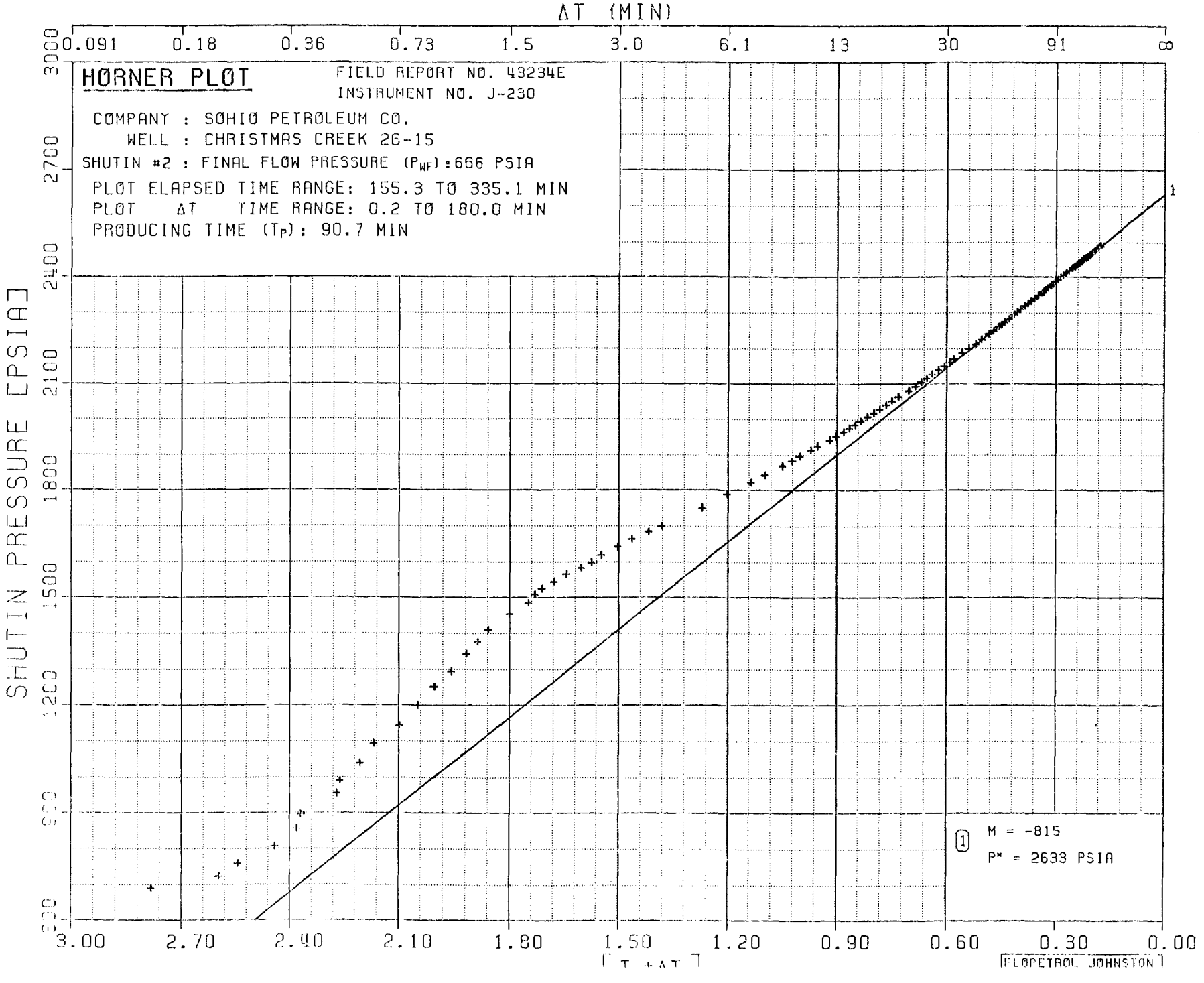
SUMMARY OF FLOW PERIODS

PERIOD	START ELAPSED TIME, MIN	END ELAPSED TIME, MIN	DURATION MIN	START PRESSURE PSIA	END PRESSURE PSIA
1	399.50	405.50	6.00	40.91	148.36
2	467.00	557.50	90.50	146.77	611.30

SUMMARY OF SHUTIN PERIODS

PERIOD	START ELAPSED TIME, MIN	END ELAPSED TIME, MIN	DURATION MIN	START PRESSURE PSIA	END PRESSURE PSIA	FINAL FLOW PRESSURE PSIA	PRODUCING TIME, MIN
1	405.50	467.00	61.50	148.36	146.77	148.36	6.00
2	557.50	738.00	180.50	611.30	609.70	611.30	96.50


ΔT (MIN)
0.28
0.37
0.48
0.63
0.85
1.2
1.7
2.6
4.3
9.8
∞
HORNER PLOT
FIELD REPORT NO. 43234E
INSTRUMENT NO. J-230
COMPANY : SOHIO PETROLEUM CO.
WELL : CHRISTMAS CREEK 26-15
SHUTIN #1 : FINAL FLOW PRESSURE (Pwf):202 PSIA
PLOT ELAPSED TIME RANGE: 3.0 TO 63.4 MIN
PLOT ΔT TIME RANGE: 0.8 TO 60.8 MIN
PRODUCING TIME (Tp): 2.5 MIN
SHUTIN PRESSURE (PSIA)
3500
3100
2700
2300
1900
1500
1100
700
300
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
[Tp+ΔT]
1
M = -1962
P* = 2784 PSIA
FLOPETROL JOHNSTON


ΔT (MIN)
0.091
0.18
0.36
0.73
1.5
3.0
6.1
13
30
91
∞
HORNER PLOT
FIELD REPORT NO. 43234E
INSTRUMENT NO. J-230
COMPANY : SOHIO PETROLEUM CO.
WELL : CHRISTMAS CREEK 26-15
SHUTIN #2 : FINAL FLOW PRESSURE (P_{WF}) : 666 PSIA
PLOT ELAPSED TIME RANGE: 155.3 TO 335.1 MIN
PLOT ΔT TIME RANGE: 0.2 TO 180.0 MIN
PRODUCING TIME (T_P): 90.7 MIN
SHUTIN PRESSURE [PSIA]
3000
2700
2400
2100
1800
1500
1200
900
600
1
M = -815
P* = 2633 PSIA
3.00
2.70
2.40
2.10
1.80
1.50
1.20
0.90
0.60
0.30
0.00
[T+ΔT]
FLOPETROL JOHNSTON

CORE LABORATORIES, INC.
ANALYTICAL REPORT

LAB #: W40993-1 DATE:

OPERATOR: SOHIO PETROLEUM

WELL #: CHRISTMAS CREEK 26-15

FIELD: Wildcat

COUNTY: Summit STATE: Utah

LOCATION: NWSE 26-2N-10E

FORMATION: Phosphoria

INTERVAL: 7302-7383 FT

SAMPLE ORIGIN: DST #1

REMARKS: SAMPLE TAKEN 10-29-84 RW = 10 OHMS T VOLUME = 223 CC
74°F Nitrate (NO_3), mg/l = ND(0.4)

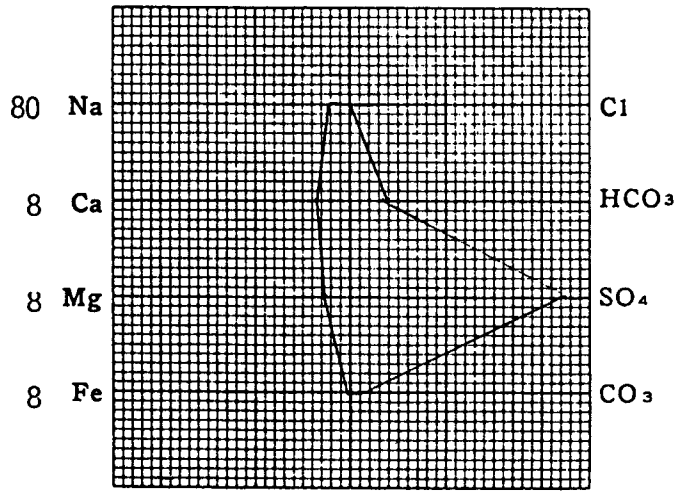
CATIONS	MG/L	MEQ/L	ANIONS	MG/L	MEQ/L
SODIUM	3888	169.12	SULFATE	8600	178.88
POTASSIUM	131	3.35	CHLORIDE	300	8.46
CALCIUM	600	29.94	CARBONATE	288	9.59
MAGNESIUM	240	19.73	BICARBONATE	1537	25.21
			HYDROXIDE	0	0.00
TOTAL CATIONS =		222.14	TOTAL ANIONS =		222.14

CALCULATED TDS MG/L = 14804
NACL EQUIVALENTS MG/L = 12320
OBSERVED PH = 8.9

SPECIFIC RESISTANCE AT 68F (OHM-M):
OBSERVED = 0.73
CALCULATED = 0.54

WATER ANALYSIS PATTERN

Scale
MEQ per Unit



(Na value in above graph includes Na and K)

NOTE: Mg/l = milligrams per liter
Meq/l = milligram equivalent per liter

Sodium chloride equivalent = by Dunlap & Hawthorne calculation from components

Core Services, Inc.®

TerraTek

November 28, 1984

Sohio Petroleum Company
1801 California Street, Suite 3500
Denver, Colorado 80202

Attention: Mr. Don Hartman

Subject: Core Analysis Data; Christmas Creek No. 26-15 Well;
Summit County, Utah; TTCS File No. 85066

Dear Gentlemen:

Diamond coring equipment and water base mud were used to obtain 4.0-inch diameter cores from the formations and intervals shown on the preceding page in the subject well. A representative of Terra Tek Core Services received the cores at the well-site where they were perserved in saran film and plastic polytubing and transported to our Salt Lake City laboratory for routine plug analysis.

A core gamma log was recorded and, along with porosity, permeability, grain density and fluid saturation plots, is shown on the enclosed Teklog.

Per your instructions, no analysis was performed on core No. 1 and only the sand zones in cores No. 2 through 4 were analyzed. Core No. 5 was a carbonate with oil show, therefore it was also analyzed.

Residual fluid removal was accomplished by the Dean-Stark low temperature solvent extraction method on 1-inch diameter plug samples drilled from the cores. Porosities were determined by Boyle's law (helium) grain volumes and Archimedes (mercury) bulk volumes. Horizontal permeabilities to nitrogen were measured in a hassler sleeve using an orifice manometer and traveling meniscus to monitor downstream flow.

Data resulting from the above analysis is tabulated on pages one through four followed by a summary reflecting average data by zones based on permeability, porosity and fluid saturation variations.

The zone from 7181 to 7190 feet, represented by sample No. 57 through 65, exhibits fluid saturations characteristic of oil production, however the reservoir capacity is very low and most of the productivity capacity is the result of micro fissures and fractures, therefore commerical production from this zone is questionable.

• 360 Wakara Way • Salt Lake City, Utah 84108 • (801) 584-2480
• 920 Central Avenue • Suite #2 • Billings, Montana 59102 • (406) 256-0371
• 1625 Broadway • Suite 2110 • Denver, Colorado 80220 • (303) 595-0263

The cores are temporarily being stored in our Salt Lake City laboratory awaiting additional instructions.

We sincerely appreciate this opportunity to be of service.

Very truly yours,

Jack R. Good

Jack R. Good
Laboratory Director

JRG/cy

FINAL DISTRIBUTION LIST

TIGHT HOLE

Sohio Petroleum Company
Christmas Creek No. 26-15 Well
Summit County, Utah

TTCS File No. 85066

2 COPIES TO:

Mobil Oil Corporation
P.O. Box 5444
Denver, Co 80217

Attn: R.S. Jong

2 COPIES TO:

Sohio Petroleum Company
P.O. Box 30
Casper, WY 82602

Attn: W. Ward

2 COPIES TO:

Conquest Exploration
600 17th Street, Suite 500 No.
Denver, CO 80202

Attn: Suzanne Webel

2 COPIES TO:

Amoco Production Company
1670 Broadway
Denver, CO 80202

Attn: Cliff Bruce

2 COPIES TO:

American Quazar
1700 Broadway, Suite 707
Denver, CO 80202

Attn: Chris Hayes

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410 17th Street, Suite 1400
Denver, CO 80202

Attn: Ron Rasmussen

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Englewood, CO 80111

Attn: Allen Sturm

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P.O. Box 1257
Englewood, CO 80150

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Three Park Centra, Suite 700
1515 Arapahoe Street
Denver, CO 80202

Attn: Tom Moklestag

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Marathon Oil
P.O. Box 2659
Casper, WY 82602

Attn: Doug Hollett

4 COPIES TO:

Sohio Petroleum Company
1801 California Street, Suite 3500
Denver, CO 80202

Attn: Don Hartman

1 COPY TO:

Aminoil, USA, Inc.
8000 East Maplewood No. 333
Englewood, CO 80111

Attn: P. Gregory

1 COPY TO:

State of Utah 'CONFIDENTIAL'
Natural Resource & Energy
Oil Gas & Mining
4241 State Office Building
Salt Lake City, UT 84114

2 COPIES TO:

Conquest Exploration
P.O. Box 4512
Houston, TX 77210

ATTN; Noemi Garza

Form OGCC-1 b

STATE OF UTAH

OIL & GAS CONSERVATION COMMISSION

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☐ OTHER Dry Hole	5. LEASE DESIGNATION AND SERIAL NO.: ML-40438
	6. IF INDIAN, ALLOTTEE OR TRIBE NAME: NA
	7. UNIT AGREEMENT NAME: Christmas Creek II
2. NAME OF OPERATOR: Sohio Petroleum Company	8. FARM OR LEASE NAME: Christmas Creek
3. ADDRESS OF OPERATOR: P.O. Box 30, Casper, WY 82602	9. WELL NO.: 26-15
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 2341' FEL, 1480' FSL	10. FIELD AND POOL, OR WILDCAT: Wildcat
	11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 26, T2N, R10E
14. PERMIT NO.: 43-043-30258	15. ELEVATIONS (Show whether DF, RT, OR, etc.): 8912.5' GR
	12. COUNTY OR PARISH: Summit
	13. STATE: Utah

16. **Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data**

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	X
REPAIR WELL	☐	CHANGE PLANS	☐	(Other)			☐
(Other)	☐			(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

Approval received per telecon between Rod Schock (Sohio) and Ron Firth (OGCC) 11/6/84 to plug and abandon as follows:

1) Set 85 sx. plug 7222-7122'
2) Set 105 sx. plug 4897-4797'
3) Set 115 sx. plug 4029-3929'
4) Set 810 sx. plug 3254-2754'
5) Set 105 sx. plug 371-271'
6) Set 10 sx. plug 93-80'

Rig released 11/8/84.

APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING
DATE: 12/13/84
BY: John R. Baza

18. I hereby certify that the foregoing is true and correct

SIGNED W.H. Ward W.H. Ward TITLE District Manager DATE 11/28/84

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

O + 1: DOGM
cc: J.H. Walters
T. Rooney
Partners
File

*See Instructions on Reverse Side

CONFIDENTIAL

CONFIDENTIAL 10

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

STATE OF UTAH

OIL & GAS CONSERVATION COMMISSION

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: ML-40438

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: NA

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ DRY XX Other

7. UNIT AGREEMENT NAME: Christmas Creek II

b. TYPE OF COMPLETION: NEW WELL ☐ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other P & A

8. FARM OR LEASE NAME: Christmas Creek

2. NAME OF OPERATOR: Sohio Petroleum Company

9. WELL NO.: 26-15

3. ADDRESS OF OPERATOR: P O Box 30, Casper, WY 82602

10. FIELD AND POOL, OR WILDCAT: Wildcat

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*
At surface: 2341' FEL, 1480' FSL ✓ NW SE
At top prod. interval reported below
At total depth: 2404' FEL, 1271' FSL

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec. 26, T2N, R10E

14. PERMIT NO.: 43-043-30258 | DATE ISSUED: 7/13/84

12. COUNTY OR PARISH: Summit | 13. STATE: Utah

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (*Ready to prod.*)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
9/2/84	11/4/84	P&A 11/8/84	8912.5' GR 8937 KB	8912.5'

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
7954'		NA	→	X	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: None

25. WAS DIRECTIONAL SURVEY MADE: Yes

26. TYPE ELECTRIC AND OTHER LOGS RUN: VSP; Dipmeter; CNL-LDT; DLL/MSFL/GR; Sonic/GR/Cal

27. WAS WELL CORED: Yes

28. CASING RECORD (*Report all strings set in well*)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13 3/8	48#	322'	17 1/2	610 sx CL G	None

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)

31. PERFORATION RECORD (*Interval, size and number*)

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*)	WELL STATUS (*Producing or shut-in*)
NA		P&A

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)

RECEIVED
DEC 03 1984
DIVISION OF OIL, GAS & MINING

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*) | TEST WITNESSED BY

35. LIST OF ATTACHMENTS: DST Tests

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED W. H. Ward | TITLE District Manager | DATE 11-29-84

*(See Instructions and Spaces for Additional Data on Reverse Side)

O+2: DOGM

cc: Ed Guynn BLM, J.H. Walters, R. T. Perkins, T. Rooney, Partners, File

INSTRUCTIONS

General: This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on items 22 and 24, and 33, below regarding separate reports for separate completions.

If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see item 35.

Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

Item 18: Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.

Items 22 and 24: If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.

Item 29: *"Sacks Cement":* Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.

Item 33: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

37. SUMMARY OF POROUS ZONES:
SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF; CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.
Core #1 Thaynes	5153	5214	No Show. Cut 61' recovered 61'
Core #2 Thaynes	5930	5978	Cut 48' Recovered 47 1/2' no porosity and no show
Core #3 Thaynes	5978	5971	Cut and recovered 13' no porosity and no show
Core #4 Thaynes	5991	6020	Cut and recovered 29'. No show
Core #5 Phosphoria	7178	7200	Cut 22' recovered 19' no show tite
DST #1 Phosphoria	7302	7383	Recovered 2230 cc's water and .39 ft^3 gas in a 2500 cc sampler

38. GEOLOGIC MARKERS

NAME	TOP MEAS. DEPTH	TOP TRUE VERT. DEPTH
Nugget	3976'	
Ankareh	4194'	
Thaynes	4830'	
Woodside	6172'	
Dinwoody	6760'	
Phosphoria	7173'	
Weber	7740'	

TerraTek **Core Services, Inc.®**

TIGHT HOLE

Sohio Petroleum Company
Christmas Creek No. 26-15 Well
Summit County, Utah

TTCS File No. 85066

Core No.	Interval	Formation
1	5153 - 5213	Not Reported
---	5213 - 5930	Drilled Interval
2	5930 - 5978	Not Reported
3	5978 - 5992	Not Reported
4	5992 - 6020	Not Reported
---	6020 - 7178	Drilled Interval
5	7178 - 7200	Not Reported

• 360 Wakara Way • Salt Lake City, Utah 84108 • (801) 584-2480
• 920 Central Avenue • Suite #2 • Billings, Montana 59102 • (406) 256-0371
• 1625 Broadway • Suite 2110 • Denver, Colorado 80220 • (303) 595-0263

TERRA TEK CORE SERVICES INC.

360 Wakara Way, SLC Utah 84108 (801) 584-2480

SOHIO PETROLEUM COMPANY
Christmas Creek 26-15

TEKLOG

01 Dec 1984
TTCS No. 85066

20 Core ø % 0

0 GR CPM 500

2.50 Gd gm/cc 3.00

0.001 K_h mD 100

Fractional Fluids
Oil Void Water

5150

5200

Drilled Interval
5213.0 - 5938.0

5950

6000

Drilled Interval
6020.0 - 7178.0

7200

TerraTek Core Services, Inc.®

University Research Park - 360 Wakara Way - Salt Lake City, Utah 84108 - (801) 584-2480 - TWX 910-925-5284

SOHIO PETROLEUM COMPANY

Well:	Christmas Creek 26-15	State:	Utah	Date:	01 Dec 1984
Field:	Wildcat	County:	Summit	TTCS File #:	85066
Drilling Fluid:	Water Base	Location:	Sec 26-T2N-R10E	Elevation:	

PLUG DEAN-STARK ANALYSIS

Sample Number	Depth (feet)	Permeability Horz (md)	Porosity (%)	Saturation Oil (%)	Saturation H2O (%)	Grain Density (gm/cc)	Lithology
	5153.0 - 5213.0						Red Shale & Sltst.
	5213.0 - 5930.0						Drilled Interval
1	5930.0-31.0	<0.01	2.5	0.0	94.7	2.82	Dol,fxl,sdy,sl/pyr
2	5931.0-32.0	0.16†	4.3	0.0	97.5	2.76	Sd,vfg,dol,sl/pyr
3	5932.0-33.0	<0.01	6.5	0.0	96.6	2.74	Sd,vfg,dol
4	5933.0-34.0	0.56	12.1	0.0	92.9	2.72	Sd,vfg,dol
5	5934.0-35.0	0.63	12.2	0.0	93.9	2.72	Sd,vfg,dol
6	5935.0-36.0	0.28	11.8	0.0	92.3	2.74	Sd,vfg,dol
	5936.0 - 5937.0						Ls,dse,sdy
7	5937.0-38.0	0.04	7.6	0.0	90.1	2.69	Sd,vfg,dol
8	5938.0-39.0	0.04	7.2	0.0	93.6	2.68	Sd,vfg,dol
9	5939.0-40.0	0.03	7.7	0.0	95.5	2.71	Sd,vfg,dol
10	5940.0-41.0	0.02	6.0	0.0	96.2	2.68	Sd,vfg,dol
11	5941.0-42.0	<0.01	4.5	0.0	97.6	2.73	Sd,vfg,dol
	5942.0 - 5947.0						Ls,dse,sty
12	5947.0-48.0	<0.01	1.9	0.0	87.0	2.70	Sd,vfg,dol,lmy
13	5948.0-49.0	<0.01	1.7	0.0	67.2	2.72	Sd,vfg,dol,lmy
14	5949.0-50.0	<0.01	1.9	0.0	84.4	2.70	Sd,vfg,dol,lmy,slt lam
15	5950.0-51.0	<0.01	2.0	0.0	97.5	2.73	Sd,vfg,dol,lmy
	5951.0 - 5952.0						Ls,dse,sty

† Horizontal dehydration crack

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SOHIO PETROLEUM COMPANY Date: 01 Dec 1984 TTCS File #: 85066

Well: Christmas Creek 26-15

PLUG DEAN-STARK ANALYSIS

Sample Number	Depth (feet)	Permeability Horz (md)	Porosity (%)	Saturation Oil (%)	Saturation H2O (%)	Grain Density (gm/cc)	Lithology
16	5952.0-53.0	<0.01	0.9	0.0	98.0	2.75	Sd,vfg,dol,lmy
17	5953.0-54.0	<0.01	1.5	0.0	85.4	2.74	Sd,vfg,dol,lmy
18	5954.0-55.0	<0.01	5.8	0.0	96.7	2.74	Sd,vfg,dol
19	5955.0-56.0	<0.01	6.2	0.0	99.7	2.71	Sd,vfg,dol
20	5956.0-57.0	<0.01	6.1	0.0	98.5	2.71	Sd,vfg,dol
21	5957.0-58.0	<0.01	4.8	0.0	99.2	2.72	Sd,vfg,dol
22	5958.0-59.0	<0.01	4.8	0.0	96.4	2.72	Sd,vfg,dol
23	5959.0-60.0	<0.01	4.9	0.0	99.3	2.71	Sd,vfg,dol
24	5960.0-61.0	0.01	2.9	0.0	98.5	2.71	Sd,vfg,dol
25	5961.0-62.0	<0.01	1.8	0.0	98.0	2.73	Sd,vfg,dol,lmy,slt lam
26	5962.0-63.0	<0.01	1.8	0.0	96.3	2.70	Sd,vfg,dol,lmy,slt lam
27	5963.0-64.0	<0.01	1.4	0.0	94.1	2.71	Sd,vfg,dol,lmy
28	5964.0-65.0	<0.01	4.3	0.0	97.5	2.74	Sd,vfg,dol,lmy
29	5965.0-66.0	<0.01	7.5	0.0	99.0	2.72	Sd,vfg,dol
30	5966.0-67.0	<0.01	7.5	0.0	98.5	2.71	Sd,vfg,dol
31	5967.0-68.0	<0.01	6.8	0.0	97.6	2.70	Sd,vfg,dol
32	5968.0-69.0	<0.01	5.7	0.0	98.3	2.72	Sd,vfg,dol
33	5969.0-70.0	0.01	8.5	0.0	98.8	2.71	Sd,f-vfg,dol,slt lam
34	5970.0-71.0	0.01	7.9	0.0	99.8	2.74	Sd,f-vfg,dol,slt lam
35	5971.0-72.0	<0.01	5.7	0.0	98.5	2.72	Sd,f-vfg,dol,slt lam
36	5972.0-73.0	<0.01	4.2	0.0	97.5	2.67	Sd,vfg,dol
37	5973.0-74.0	<0.01	6.3	0.0	98.8	2.70	Sd,vfg,dol,slt lam

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SOHIO PETROLEUM COMPANY Date: 01 Dec 1984 TTCS File #: 85066

Well: Christmas Creek 26-15

PLUG DEAN-STARK ANALYSIS

Sample Number	Depth (feet)	Permeability Horz (md)	Porosity (%)	Saturation Oil (%)	Saturation H2O (%)	Grain Density (gm/cc)	Lithology
38	5974.0-75.0	<0.01	5.6	0.0	98.8	2.71	Sd,vfg,dol,slt lam
39	5975.0-75.5	<0.01	6.1	0.0	96.4	2.70	Sd,vfg,dol,sl/lmy
	5975.5 - 5978.0						Not Recovered
40	5978.0-79.0	<0.01	5.1	0.0	99.2	2.70	Sd,vfg,dol
41	5979.0-80.0	<0.01	4.5	0.0	95.7	2.71	Sd,vfg,dol,slt lam
	5980.0 - 5992.0						Ls,dse,sty
42	5992.0-93.0	<0.01	1.2	0.0	80.8	2.71	Sd,vfg,dol,lmy,slt lam
43	5993.0-94.0	<0.01	3.7	0.0	92.0	2.70	Sd,vfg,dol,lmy
44	5994.0-95.0	0.22	10.7	0.0	89.2	2.71	Sd,f-vfg,dol
45	5995.0-96.0	<0.01	7.8	0.0	94.5	2.70	Sd,f-vfg,dol,slt lam
46	5996.0-97.0	0.03	8.3	0.0	93.0	2.70	Sd,f-vfg,dol
47	5997.0-98.0	0.03	8.4	0.0	95.2	2.70	Sd,f-vfg,dol
48	5998.0-99.0	0.02	8.8	0.0	99.3	2.70	Sd,f-vfg,dol
49	5999.0-00.0	0.02	8.1	0.0	97.3	2.68	Sd,f-vfg,dol
50	6000.0-01.0	0.02	8.2	0.0	92.3	2.70	Sd,f-vfg,dol
51	6001.0-02.0	0.02	8.6	0.0	92.5	2.69	Sd,f-vfg,dol
52	6002.0-03.0	<0.01	2.3	0.0	97.8	2.67	Sd,vfg,dol,lmy
53	6003.0-04.0	<0.01	3.1	0.0	97.8	2.69	Sd,vfg,dol,lmy
	6004.0 - 6020.0						Ls,dse,frac,sty
	6020.0 - 7178.0						Drilled Interval
54	7178.0-79.0	<0.01	1.2	0.0	91.5	2.82	Dol,vfxl,sl/shy
55	7179.0-80.0	<0.01	3.0	0.0	78.3	2.84	Dol,vfxl

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SOHIO PETROLEUM COMPANY Date: 01 Dec 1984 TTCS File #: 85066
Well: Christmas Creek 26-15

PLUG DEAN-STARK ANALYSIS

Sample Number	Depth (feet)	Permeability Horz (md)	Porosity (%)	Saturation Oil (%)	Saturation H2O (%)	Grain Density (gm/cc)	Lithology
56	7180.0-81.0	3.6†	3.2	0.0	69.7	2.84	Dol,vfxl,sl/shy
57	7181.0-82.0	0.04	3.4	16.2	41.0	2.80	Dol,vfxl,sl/chty
58	7182.0-83.0	<0.01	2.4	17.8	45.8	2.81	Dol,vfxl,sl/chty
59	7183.0-84.0	0.02	2.4	15.1	45.2	2.81	Dol,vfxl,sl/chty
60	7184.0-85.0	0.30	2.4	13.8	45.9	2.79	Dol,vfxl,sl/chty,fis
61	7185.0-86.0	0.09	2.4	11.8	46.3	2.79	Dol,vfxl,sl/chty,fis
62	7186.0-87.0	0.59	2.9	14.6	40.7	2.78	Dol,vfxl,sl/chty,fis
63	7187.0-88.0	0.37	4.9	14.3	30.3	2.88	Dol,vfxl,sl/anhy,fis
64	7188.0-89.0	0.09	2.7	13.0	37.0	2.89	Dol,vfxl,anhy,fis
65	7189.0-90.0	0.22	2.4	11.5	53.0	2.89	Dol,vfxl,anhy,fis
66	7190.0-91.0	0.69	2.1	6.0	68.0	2.88	Dol,vfxl,anhy,fis
67	7191.0-92.0	0.11	1.9	7.9	55.4	2.90	Dol,vfxl,anhy,fis
68	7192.0-93.0	0.12	1.1	8.2	62.8	2.87	Dol,vfxl,anhy,fis
69	7193.0-94.0	0.81	1.3	7.1	70.2	2.87	Dol,vfxl,anhy,fis
70	7194.0-95.0	<0.01	1.9	0.0	94.3	2.85	Dol,vfxl,sl/anhy
71	7195.0-96.0	<0.01	2.1	0.0	93.9	2.85	Dol,vfxl,sl/anhy
72	7196.0-97.0	<0.01	3.0	0.0	84.8	2.85	Dol,vfxl
	7197.0 - 7200.0						Not Recovered

† Horizontal dehydration crack

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SOHIO PETROLEUM COMPANY

Well:	Christmas Creek 26-15	State:	Utah	Date:	01 Dec 1984
Field:	Wildcat	County:	Summit	TTCS File #:	85066
Drilling Fluid:	Water Base	Location:	Sec 26-T2N-R10E	Elevation:	

PLUG DEAN-STARK ANALYSIS
DATA SUMMARY

Zone Number	Depth Interval (feet)	Number of samples	Permeability Horz (md)	Porosity (%)	Saturation Oil (%)	Saturation H2O (%)	Grain Density (gm/cc)
1	5930.0-933.0	3	<0.01 [0.00]	4.4 [2.0]	0.0 [0.0]	96.3 [1.5]	2.77 [0.0]
2	5933.0-936.0	3	0.49 [0.18]	12.0 [0.2]	0.0 [0.0]	93.0 [0.8]	2.72 [0.0]
3	5937.0-942.0	5	0.03 [0.02]	6.6 [1.3]	0.0 [0.0]	94.6 [2.9]	2.70 [0.0]
4	5947.0-954.0	6	<0.01 [0.00]	1.6 [0.4]	0.0 [0.0]	86.6 [11.3]	2.72 [0.0]
5	5954.0-960.0	6	<0.01 [0.00]	5.4 [0.7]	0.0 [0.0]	98.3 [1.4]	2.72 [0.0]
6	5960.0-964.0	4	<0.01 [0.00]	2.0 [0.6]	0.0 [0.0]	96.7 [2.0]	2.71 [0.0]
7	5964.0-980.0	14	<0.01 [0.00]	6.1 [1.4]	0.0 [0.0]	98.2 [1.1]	2.71 [0.0]

[ ] Sample standard deviation

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SOHIO PETROLEUM COMPANY Date: 01 Dec 1984 TTCS File #: 85066
Well: Christmas Creek 26-15

DATA SUMMARY

Zone Number	Depth Interval (feet)	Number of samples	Permeability Horz (md)	Porosity (%)	Saturation Oil (%)	Saturation H2O (%)	Grain Density (gm/cc)
8	5992.0-994.0	2	<0.01 [0.00]	2.5 [1.8]	0.0 [0.0]	86.4 [7.9]	2.71 [0.0]
9	5994.0-002.0	8	0.04 [0.07]	8.6 [0.9]	0.0 [0.0]	94.2 [3.2]	2.70 [0.0]
10	6002.0-004.0	2	<0.01 [0.00]	2.7 [0.6]	0.0 [0.0]	97.8 [0.0]	2.68 [0.0]
11	7178.0-181.0	3	<0.01 [0.00]	2.5 [1.1]	0.0 [0.0]	79.8 [11.0]	2.83 [0.0]
12	7181.0-190.0	9	0.19 [0.20]	2.9 [0.8]	14.2 [2.0]	42.8 [6.5]	2.83 [0.0]
13	7190.0-194.0	4	0.43 [0.37]	1.6 [0.5]	7.3 [1.0]	64.1 [6.6]	2.88 [0.0]
14	7194.0-197.0	3	<0.01 [0.00]	2.3 [0.6]	0.0 [0.0]	91.0 [5.4]	2.85 [0.0]

[ ] Sample standard deviation

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HORIZONTAL PERMEABILITY VS POROSITY

SOHIO PETROLEUM COMPANY

Christmas Creek 26-15
Wildcat Field
Summit County, Utah
01 Dec 1984

Depth Interval : 5153 to 7200 feet		
Permeability (K_h), mD		
Min	Max	Geo. Ave
0.00	3.61	0.01
Porosity (ø), %		
Min	Max	Average
0.9	12.2	4.8
Equation of the Line		
Log K_h = Slope ø + Log of interoept		
Log K_h = .0721 ø - 2.3321		
Correlation Coefficient : .222